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The Independent  
Voice of  
American Aeronautics

# American Aviation



## An Idea Pays Out

OUT OF the heart of Texas has come more than a theme for a popular song. Two men who sleep, drink, and eat aviation 365 days out of the year became worried a few months ago about the pending shortage of pilot instructors. Airplane production was moving ahead with increased rapidity. The need of a vast reservoir of pilots was becoming acute.

Away down in Texas far from the maddening confusion of Washington, these two men began figuring out ways and means of increasing the pilot strength without resorting to the red tape and delays of official Washington. Not only did they come up with an idea they carried the idea into actual being. Net result: the idea bore fruit and has achieved national recognition and acceptance.

The plan? Simply to recruit the services of thousands of private pilots for non-combatant war duty. The CAA had trained many thousands of private pilots and in addition there were thousands of plain average Americans who had earned their private licenses the hard way because they wanted to fly. But where were these pilots? Could they be rounded up for volunteer duty?

Our two friends in Texas were determined to find out. So they solicited the services

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Published Twice a Month at Washington, D. C.

## Airpower Pushed to Top Spot in War Budget; Output Booms

### Meeting Their Schedules



B-24s and P-40s Join the Flood of Production

**\$35,557,000,000  
Total is 23%  
Of All Funds**

By GEORGE N. SHUMWAY

WITH a current appropriation of \$8,761,000,000 in new funds for aircraft, engines, and parts, total expenditure allocated for U. S. aviation since June 1940 reaches the staggering total of \$35,557,000,000—23% of all World War II funds.

Aviation has thus been made the No. 1 cost item in America's huge war program.

Reports from industrial centers indicate that aviation likewise stands in No. 1 place among all categories of war production.

The vehicle on which aviation has finally reached the top of the appropriation line-up is the Sixth Supplemental War Appropriation Act, signed by the President on Apr. 28. Ordinance, next largest item in the line-up, accounts for 21% of the grand total of \$156,416,000,000 now available for war purchases.

Feverishly at work to translate Congressional appropriations into airpower, America's aircraft manufacturing industry in March—the fourth month after Pearl Harbor—built nearly 70% more planes

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- And Regular Features

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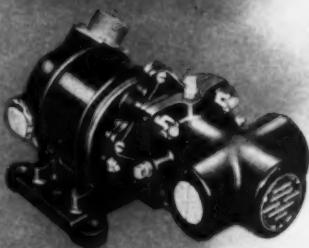


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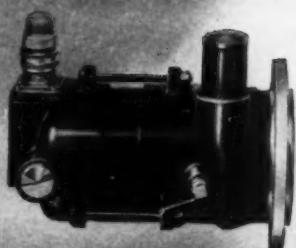
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# German Warcraft Analyzed by Air Forces

## Details of Nazi Gliders Included In Official Data

THE MOST important types of German military aircraft are described in an official release issued in Washington by the U. S. Army

Air Forces, in cooperation with the British Air Ministry.

AMERICAN AVIATION for May 1 carried in full the descriptions of Japanese planes, and future issue will explain the Italian warplanes.

Described fully in the release are the German gliders, which were used so successfully in the invasion of Crete.

The official data follows:

### German Warplanes

DESIGNATION	FOCKE WULF FW189 Army Co-operation.
DIMENSIONS	Span 60.4 ft. Length 39.4 ft. Wing area 409 sq. ft.
DUTY	Army Co-operation, ground attacks, ambulance, communications and advanced training.
CREW	Believed 3.
GENERAL DESCRIPTION	Twin-boom, low-wing monoplane of stressed-skin metal construction. The central nacelle housing the crew has a transparent perspex panelled nose. The tail unit has twin fins and rudders. The undercarriage retracts rearwards into the engine nacelles, and the tailwheel retracts sideways into the tailplane. Two Argus As410 inverted-vee, 12-cylinder, air-cooled. 370 h.p. at 9,800 ft.
ENGINES	2 x 7.9-mm guns in wings. 1 x 7.9-mm gun dorsal. 1 x 7.9-mm in tail of nacelle.
ARMAMENT	Normal flying weight 7,480 lb. Maximum speed 220 m.p.h. at 8,500 ft. Service ceiling 27,500 ft. Range is not known.
PERFORMANCE	
DESIGNATION	JUNKERS Ju88 Bomber. (Pictured below).
DIMENSIONS	Span 65 ft. Length 47 ft. Height 16 ft. Wing area 520 sq. ft. net.
DUTY	Long-range bombing, dive-bombing, photographic and reconnaissance.
CREW	3 to 4.
GENERAL DESCRIPTION	Two Junkers Jumo 211 liquid-cooled, 12-cylinder, inverted-vee. 1,150 h.p. at 15,000 ft. Large circular frontal radiators are fitted giving the impression that the aircraft is fitted with radial engines.
DIVE BRAKES	The dive brakes are fitted outboard of the engine nacelles and are of the metal "park-bench" type.
ENGINES	Two Junkers Jumo 211 liquid-cooled, 12-cylinder, inverted-vee. 1,150 h.p. at 15,000 ft. Large circular frontal radiators are fitted giving the impression that the aircraft is fitted with radial engines.
AIRSCREWS	V. D. M. controllable pitch full feathering type.
ARMAMENT	1 or 2 x 7.9-mm guns and occasionally 1 x 20-mm shell gun forward fuselage. 2 x 7.9-mm guns dorsal. 1 or twin 7.9-mm ventral. Provisions for 1 x 7.9-mm lateral on starboard side. The pilot's seat and the upper and lower gunners are fully protected.
ARMOR	
PERFORMANCE	Normal flying weight 29,000 lb. Maximum speed 255 m.p.h. at 16,000 ft. Cruising speed 200 m.p.h. at 16,000 ft. Service ceiling

19,500 ft. Range 1,150 miles. Endurance 5.25 hours. Bomb load 4,400 lb. Fuel tankage 590 gallons.

NOTE: Under certain circumstances the bomb load can be increased to about 2½ tons. All internal fuel tanks are of the self-sealing type and are fitted in the wings. In certain conditions auxiliary tanks are fitted internally in the bomb compartments and the aircraft can also be adapted to carry external jettisonable tanks under the wings. The Ju88 is equipped for assisted take-off.



Official Photograph, U. S. Army Air Corps

Heinkel He113—Top Speed 380 MPH. at 17,000 Ft.

DESIGNATION	HEINKEL He113 Single Seater Fighter. (Pictured above).
DIMENSIONS	Span 31 ft. Length 27 ft. Height 8 ft. Wing area 155 sq. ft.
DUTY	Fighting.
CREW	1.
GENERAL DESCRIPTION	A development of the He112, this aircraft is a low-wing monoplane of all metal, stressed-skin construction. The wings have a flat center section and a slight dihedral from the undercarriage legs outwards to the wing tips. The fuselage is of oval section and the tail unit is of cantilever monoplane type. The undercarriage is retractable, as is also the tailwheel. DB601N liquid-cooled, inverted-vee 12 cylinder. 1,200 h.p. at 16,500 ft.
ENGINES	Three-bladed metal V. P.
AIRSCREWS	2 x 7.9-mm guns forward fuselage and 2 x 7.9-mm guns in wings, or 1 x 20-mm shell gun firing through the aircrew spinner and 2 x 7.9-mm guns in the wings.
ARMAMENT	Normal flying weight (estimated) 5,700 lb. to 6,000 lb. Maximum speed 370 m.p.h. to 380 m.p.h. at 17,000 ft. Service ceiling (estimated) 37,500 ft.
PERFORMANCE	

DESIGNATION	FOCKE WULF Fw200K Bomber.
DIMENSIONS	Span 108 ft. Length 78 ft. Height 20 ft. Wing area 1,170 sq. ft. net.
DUTY	Long-range sea reconnaissance, ship strafing, mine laying, and work in conjunction with submarines.
CREW	6.
GENERAL DESCRIPTION	Four-engine, low-wing, cantilever monoplane of metal stressed-skin construction. The wing is in three sections, comprising center section supporting four engines and two outer sections. Split flaps divided into seven sections are fitted and the ailerons are slotted and have controllable tabs. A large gondola is fitted to the starboard under-side of the fuselage, extending from below the pilot's seat to just aft of the trailing edge of the wing. De-icing equipment is fitted to the wing and tailplane. The tailplane is of metal cantilever construction having a single fin and rudder.
ENGINES	Four Bramo-Fafnir 323 air-cooled radial 850 h.p. each at 11,500 ft. 3 bladed V. P.
AIRSCREWS	1 x 20-mm shell gun firing forward in the gondola. 2 x 7.9-mm guns in dorsal turret. 2 x 7.9-mm guns lateral. 1 x 7.9-mm gun ventral. In some cases an additional turret is fitted on the top of the fuselage near the tail, armed with a gun of unknown calibre.
ARMAMENT	The aircraft is extensively armored but the positions are unknown. Normal flying weight 48,500 lb. Maximum speed 250 m.p.h. at 13,000 ft. Cruising speed 180 m.p.h. at sea level. Service ceiling 21,500 ft. Range (maximum) 2,430 miles. Carrying a bomb load of 3,300 lb.
PERFORMANCE	

NOTE: There are a large number of variations of range and bomb load according to the duty being performed.

DESIGNATION	MESSERSCHMITT Me109F Fighter.
DIMENSIONS	Span 32.7 ft. Length 29.8 ft. Height 8.5 ft. Wing area 152 sq. ft. net.
DUTY	Fighting.
CREW	1.
GENERAL DESCRIPTION	This single-seater fighter is a development of the Me109E. The wing, which is of the cantilever single-spar type, has rounded

(Turn to page 13)



Official Photograph, U. S. Army Air Corps

# Army, Navy Air Arms Battle for Pilots

## Scholastic Requirements Revised as Services Resort to Deferred Enlistments for Prospective Air Men

INCREASING needs for air and ground crews to man the fighting planes of the rapidly expanding air forces has caused Army and Navy recruiting services to bid highly for the prospective enlistee. Estimated needs for man power in the fast growing air forces are so high that the forces are now recruiting men for future service under revised physical and educational requirement standards.

### Army

The Army has announced a plan to recruit men in the colleges and universities of the nation for future requirements of its flying service. The plan calls for the procurement of aviation cadets through preliminary enlistment as privates in the Air Force Enlisted Reserve. The program will provide opportunities for enlistment on a deferred service basis so that the aviation cadet candidates may continue their education until actually required for Army training.

Students enlisted in the Enlisted Reserve are subject to call to active duty at any time. However, the plan is to defer them, permitting further scholastic training provided they maintain satisfactory scholastic standards.

Whether college students will continue college training for these special posts will depend largely upon the result of examinations to be given to sophomore students enlisted in the Air Force Reserve. These men will already possess qualifications for aviation cadet training, but the continuance of their education will be of further benefit to the Army when eventually they are called to active duty.

Students enlisted in the Air Force Reserve who are graduated or who may be called to duty before graduation, will be ordered to active duty and appointed aviation cadets, with an opportunity to compete for commissions in the same manner as other aviation cadets.

Young men enlisted in the Air Force Reserve and deferred for scholastic reasons will be identified by an emblem similar to the familiar Air Forces wing-and-propeller insignia.

General Arnold has requested that colleges and universities appoint a Faculty Air Forces Advisor to provide a definite contact between the representatives of the Army and the college personnel.

"This representative," General Arnold said, "will be kept fully informed of plans and changes in plans, and with him, the representative of the Army will establish a relationship which will facilitate the exchange of information and advice. He will aid to avoid disruption of college activities and will bring to the Army's attention the problems that will arise because of local conditions."

### Navy

High school graduates may qualify to become aviation officers in the U. S. Navy or Marine Corps under a new plan of recruiting approved by the Navy Dept.

This marks the first time the Navy has offered young men with only a secondary education the opportunity to apply for flight training leading to commissioned officer status.

Recruiting has commenced in every section of the U. S. and candidates between their 18th and 27th birthdays who are graduates of high schools are eligible to apply.

Officials say the new plan will not interfere in any way with the Class V-1 program under which college students may enlist now to become aviation, deck, or engineering officers and continue their education, at least until the end of the second calendar year.

Qualified candidates are to be sent to one of the new aviation induction centers, located at the Universities of Iowa, Georgia and North Carolina and St. Mary's College, California, for three or four months of training devoted primarily to "toughening" them.

Following this will come three months of primary flight training at a Naval Reserve Aviation Base. Successfully completing this second phase of their Navy education, the candidates will be sent on to the Naval Air Stations at either Pensacola, Fla., or Corpus Christi, Tex., for approximately three months of advanced flight training.

Commissions as Ensigns in the U. S. Naval Reserve or Second Lieutenants in the U. S. Marine Corps Reserve await candidates who successfully complete the course.



**Lying Low:** A mechanic of Britain's Fleet Air Arm hangs on to the chocks while an Albacore waits to take off. The slip stream is so powerful that anyone standing up behind the plane would be blown into the sea.

## 7 More AAF Schools OK'd

## Air Forces Asks CAA for 2,000 Flight Teachers

APPROPRIATIONS have been authorized for the construction of seven more Air Force Training Schools to cost in excess of \$31,000,000, War Dept. officials report. The schools to be constructed, in addition to those previously reported, will be built at Ajo, Ariz.; Colorado Springs, Colo.; Goldsboro, N. C.; Lincoln, Neb.; Deming, N. M.; Admore, Okla.; and Kelly Field, Tex.

Authorization has also been granted for two Air Forces installations at Pocatello, Ida., and Salina, Kan., to cost in excess of \$6,000,000. While the War Dept. will not permit disclosure of the purposes of the installations, it is definitely known they will not be Air Forces Training Schools.

The commander of Gulf Coast Air Corps Training Center, Maj. Gen. H. R. Harmon, has released additional information on nine of the ten new air schools to be located in Texas.

In trend with the heavier pressure for training of air crew members to man bombers, the Army Air Force's most effective long-arm weapon, the training center announced that additional schools for bombardiers will be activated at San Angelo, which already has a basic school, and at Big Spring. Advanced twin-engine pilot schools are in the plans for Lubbock and Waco, which already have training schools in operation.

A new school for navigators is to be set up at Hondo, 40 miles west of San Antonio. The center's only navigation school now at Kelly Field will be transferred to Hondo when the station there is ready. Kelly also gives advanced pilot training.

Eagle Pass, Tex., will get a school for advanced training of single-engine pilots, while the pursuit plane gunners from the four single-engine schools will be trained on gunnery ranges at Matagorda Island and Matagorda Peninsula.

Greenville, Tex., will get a new basic flying school.

MOVING to meet an immediate need for flight instructors to train the thousands of new pilots the Army must have to fly its rapidly growing number of warplanes, the Air Forces Flying Training Command last month called upon the Civil Aeronautics Administration to supply 2,000 civilian flight instructors by June 15 for duty at Army flying schools.

Special funds totaling \$2,000,000 have been made available to the CAA from President Roosevelt's Emergency Fund to carry out the training program in instruction technique which is being offered to civilian pilots not now engaged in other vital war work.

Candidates for the special instructor training are expected to come from the more than 83,000 private pilots, who, for financial or other reasons have not yet acquired sufficient flying time to qualify as instructors, since the supply of experienced instructors has long been exhausted.

Many instructors now participating in the Civilian Pilot Training Program will probably be called to the instructor staffs at Army schools, being replaced in the CAA program by graduates of the new instructor refresher courses.

### Mfrs. Solicited

In its effort to locate prospects with the proper qualifications, the CAA has urged all aircraft manufacturers to release for instructor training licensed pilots on their payrolls who are now engaged in less essential types of non-flying activity.

Candidates for the instructor courses must be U. S. citizens between the ages of 21 and 42, able to meet the physical requirements for a commercial pilot certificate, and must have logged at least 140 solo hours. Applicants may be married if their dependents have means of support during the training period.

The trainees will not be paid while taking the CAA course, but will receive from \$200 to more than \$300 monthly as civilian instructors for the Army. Those who become instructors at Army flying schools will later have opportunity for a commission in the Air Forces with rating of service pilot.

The amount of upgrade training each applicant will receive from the CAA will depend upon the experience of the individual starting the course. The 2,000 new instructors will be trained without adding to existing facilities of the CAA, with plans calling for an acceleration of the present program and more training hours daily.

Applications may be filed through CAA regional offices.



# The Birdmen's Perch

This month's Perch is being written in an unnamed town somewhere east of the Mississippi. We've not been recognized yet and if we can help it we're not going to be! Our Tattered Wing Tips are positively lacy at this point. Explanation below.

Major Al Williams, alias "Tattered Wing Tips,"  
Gulf Aviation Products Manager, Gulf Bldg., Pittsburgh, Pa.

## A GOOD FIVE-CENT SAGA

First time we have a chance we're going to sit down and write one of those jump-ahead-of-the-Gestapo books. It'll be a daisy, too. We have become a one-man persecuted minority.

For the benefit of the three (there couldn't have been more) lads who did NOT write nasty things to us about our mistake in the January Perch, it happened like this: We printed a Brain Twister in which Aviators 1 and 2 asked for half of each other's gas. The boys should have said "one gallon" instead of "half."

Well, sir, soon after the Twister appeared we began to get requests for the



answer. We mailed them out, chuckling like crazy at how we'd stumped all the smart Perch Pilots.

Then ZOWIE!—the mail began to zing into Pittsburgh in fighting vees. "Where did we ever get an answer like that; and who ever told us the puzzle could be worked; and what was the country coming to with such people as us on the loose?"

We checked back, found our mistake, pinned a letter of apology to our door for the mailman and got out of town fast!

Wherever we go now, dogs snarl at us, children throw stones. No one will talk to us—not even our draft board. But worst of all is our treatment at the hands of flying men. We've skulked from one end of the country to the other trying to hide from pilots who leer at us and hiss, "STUPORMAN!"

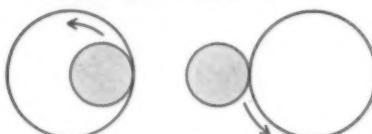
Please, fellas, give us another chance.

If you do, we'll give you a lulu of a puzzle this month. We'll give you a puzzle that'll throw you into a flat spin in thirty seconds flat. (Anti-spincutes barred.)



## THIS MONTH'S BRAIN TWISTER

The diameter of the large gear is just twice that of the small one. How many revs will the small gear make in going round (A) the inside of the large gear (B) the outside of the large gear?



Ya' better give up right now and drop us a card for the answer. Our solution has been triple tested, double checked, and passed by a board of experts—this month!

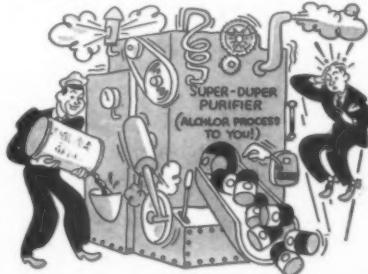
## CENTIGRADE STUFF

A late model, twin-engine attack bomber has two 13-inch oil coolers which do the cooling job of an 18-ton refrigeration system!

Mention that to someone outside of aeronautics and he'll probably tell you you're crazy. Tell it to a man in the industry and he'll simply shrug his shoulders and wait for you to continue.

We're trying to point out that superlatives have become commonplace in this business. We continually take for granted things which astonish non-flying men. Such as Gulfpride Oil—

Try explaining to one of your groundlings the temperatures and speeds



under which Gulfpride must deliver an efficient job of lubrication.

Tell him that even though we used nothing but the finest crudes available, we had to develop a special refining technique, the Alchlor Process, to make a lube with Gulfpride's stamina. Make him understand that this Alchlor Process begins where ordinary refining methods leave off. It does a more complete job of purify-

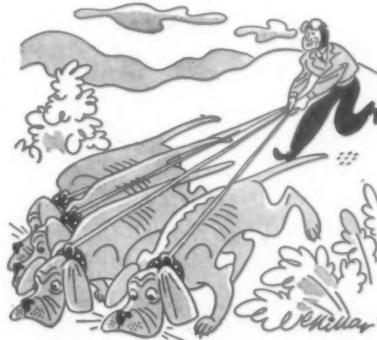
ing; gets more of the carbon makers and sludge formers out of Gulfpride. Tell him Gulfpride Oil costs about the same as other aviation lubricants.

Then grab your non-flying friend by the arm—he's apt to be sagging a little.

We're going to pass up the Whopper this month and see if we can't track down some of the Perch Pilots we've not heard from lately.

We wonder, for instance, if Mush Mathis is still a jump ahead of his CPTP classes and how E. H. Pickering's business (air freight) is these days.

We've not heard from the Swinson brothers who operate a flying service in Pratt, Neb.,



nor from Dave Mayor, in many moons. And what about Foggy Davidson? If you fellows are out of ink, maybe a drop or two of Gulf Aviation Gas might help your pens take off.

Ground Instructor Walter Biddle was in Albuquerque when we last heard from him, but that was months ago. And Bob Secrist of Dayton and Richard Sullivan of Kansas City, what's happened to you lads?

Come on, gang, let us know what's happening. And send in some more Whoppers and Brain Twisters.

And don't forget the answers.

MAJOR AL WILLIAMS

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AVIATION  
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OIL IS AMMUNITION



# U.S.-Amazon Valley Cargo Line Advocated

## Could Secure Vital Materials, Expert States

By WILLIAM M. SHEEHAN

ONE OF the best ways of combating the Axis menace in South America is establishment of large-scale air freight operations from the heart of the Amazon Valley direct to the U. S.

When Hitler said, "We shall build a new Germany in South America," he probably had in mind this great river basin. Its rich jungles and swamps lie in five different republics, covering an area almost as large as the U. S. The people there are closer to Europe by race, religion and political creed than to us.

In Brazil, where you will find 565 airports, there are 2,000,000 people of German blood. Compared with a total population of 44,000,000, this figure may seem small. But considering that less than half of the population is white, and of these only 15,000,000 are literate, the German minority is a real threat.

Recently I traveled through parts of the Amazon back country. In places it is so wild that jungle trails through the dense tropical undergrowth are veritable tunnels and flashlights are necessary to see the way. Natives keep boa constrictors in their houses to prey upon rodents.

### Two Impressions

By virtue of talking with all sorts of people, I came away with two definite impressions. First, that the Amazonian has no particular affection for Germans and Italians, but even less for the American gringo. Of course our generous spending down there is making for increased friendship. But it is almost entirely the "fair weather" variety in which we ought not trust blindly.

Second, strong military bases throughout this territory would be our best guarantee that at a time when attention was concentrated in other quarters such as Alaska or Iceland, the South American back door would not be suddenly pushed open.

Yet, despite fear of Axis invasion, South Americans are not inclined to welcome protection from Uncle Sam. Accordingly, the wisest policy for us would be to flood these countries with experts and officials in a civilian capacity and improve transportation facilities so as to be able to move troops and supplies to affected areas whenever a Nazi invasion is actually indicated.

At present, aside from Army flights to the Canal Zone, there are no air freight operations between North and South America. Pan American Airways dispatches a Clipper from Para up the Amazon to Tabatinga once a week. And the Faucett and Peruvian National Airways make occasional flights over the Andes to Iquitos. But neither of these is a



Loading Machine Guns and Other Equipment  
Marines Use a Derrick over the Doorway of the DC-5

cargo operation and neither has direct connection with the U. S.

Practically all the products of the Amazon basin (including many on our Strategic Materials List) move down the Amazon River to the Atlantic Ocean and then up through submarine-infested waters to the U. S. It is not only a slow and perilous method of transportation, but one that is extremely hampered by lack of shipping space, a condition likely to continue for some time. I have seen materials desperately needed by our war industries lie neglected there for want of internal transportation facilities.

Of all the high-value, urgently needed materials that suffer from inadequate transportation in the Amazon territory, carnauba wax (for electric insulation), Brazil nuts, furs, vegetable oils, cork substitutes and medicinal plants, the one that interested me most was rubber.

President Roosevelt recently indicated that Amazon production of crude rubber could be increased

from 15,000 to 60 or 70,000 tons per year if transportation problems could be overcome.

I made many trips along the tunnel-like "estradas" (trails) where the white latex is gathered in little tin cups pressed into the sides of the trees, watched the latex being coagulated by a crude process in smoke-filled huts and saw the 120-pound balls of crude rubber floating in rafts of 200 or 300 each down jungle streams.

There is no doubt in my mind that by improved collection technique, by using outboard motor boats along small streams, single engined seaplane transports between collection points, and large air freight carriers from the main collection point, presumably at Manaos, Brazil, to the U. S., the hoped-for Amazonian rubber increase can be achieved.

Years ago when all our rubber came from South America, Manaos, which stands at the junction of the Amazon and Negro Rivers, became a first class city with paved streets,

electric lighting, handsome cafes and a \$5,000,000 opera house. Today it has a population of more than 80,000, many of whom are concerned with exportation of rubber, for practically all the South American production passes through this port on the way to the sea.

But there is another reason for choosing Manaos as southern terminus of the Amazonian airline, viz., its strategic importance. If you place one leg of a pair of dividers upon Manaos, which is in almost the exact center of the continent and move the other completely about it at a distance of 720 miles (less than from New York to Chicago), the area marked out will include eight of South America's 12 countries and colonies.

In these eight countries are all the places the Germans would be likely to use as a springboard for destruction of the Panama Canal or invasion of southern U. S. or southern South America. To be able to move large quantities of troops and supplies overnight to Manaos would be a most effective and practical defense set-up.

The most logical route for an intercontinental air freight service would be from Miami to Kingston, Jamaica, to Maracaibo, Venezuela southeast over the 12,000-foot Cordillera de Merida to some convenient location in southern Venezuela, and then to Manaos. This permits an almost straight approach from Miami to Manaos in four hours of approximately 600 miles each.

### CW-20C Praised

A good transport for this operation is the new Curtiss-Wright CW-20C. This 20-ton twin-engined job would haul a load of something like six or seven tons at a fairly low operating cost. Using estimates of the manufacturer, which include a generous allowance for overhead as well as direct operating expense, it appears that the cost of flying each pound of payload from Manaos to Miami would be approximately 13 cents.

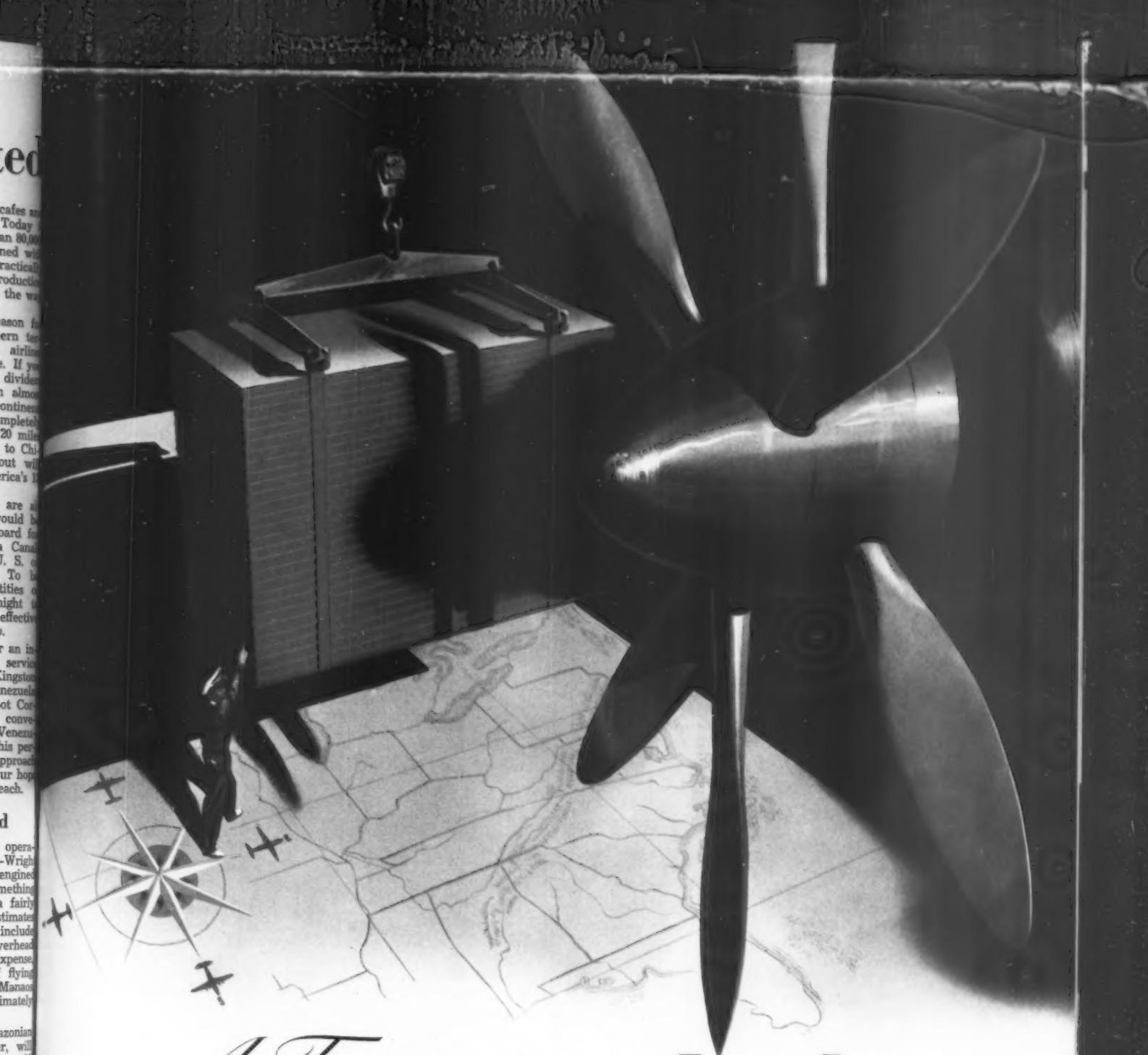
Since some of these Amazonian products, particularly rubber, will soon be worth their weight in gold to our war industries, the above expense would seem to be a reasonable defense burden.

Although rubber is now being brought up from South America by sea at approximately half this cost, the fact that ships are being sent to the bottom at an alarming rate makes the present method, in the case of rubber at least, a really extravagant one. Air shipments will be comparatively safe. For whereas our control of the seas is already being challenged, it is conceivable, short of defeat itself, that there will be any effective interference with air commerce above the Western Hemisphere.

A fleet of 12 or 15 CW-20C's could handle the entire current production of South American rubber. For southbound trips there are unlimited quantities of industrial products and military supplies that must be moved down in the fastest way possible.



Ground Service Crews Board a Transport  
Double Doors on the DC-5 Provide Ample Loading Room



## *Air Transport - on a* **Tonnage Basis**

They are coming...the big ships—opening the entire world to you and the goods you make or buy. Like the largest airplanes of the past and present, they will rely on power by Wright.

**WRIGHT** *Aircraft Engines*

WILL POWER THE TONNAGE OF THE AIR



## How Boots Self-Locking "Cage" Nuts Help Build Plywood Planes

When aircraft manufacturers saw they could speed production and save vital aluminum by building trainers out of plywood and plastics, they needed a dependable self-locking nut for permanent blind fastenings. The Boots Self-Locking "Cage" Nut is getting these indispensable trainers into the air—and is enabling the substitution of plywood in certain combat plane applications.

The same Boots principle of the familiar all-metal Wing Style nut is combined with a base designed

to be clinched permanently into the plywood, in spider leg fashion. It can be applied from one side, by one operator and it grips the plywood so firmly that it will withstand—without tearing—the torque applied when bolt or screw is inserted by production methods.

The application of the Boots Self-Locking "Cage" Nut for plywood will find many more applications as the use of plywood in aircraft continues in its rapid adaptation.

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AIRCRAFT NUT  
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Here is the Boots "Cage" nut as it comes from the factory, ready to fasten plywood sub-assemblies for faster production.



This is the special tool for fastening the nut to the plywood.



Now the nut is permanently gripping the base sheet of plywood ready to be bolted to the adjacent part of the plane.

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## Burma Air Road Carries Growing Stock of Materials

AN AMERICAN Air Service employing both private and U. S. Army facilities is supplying China from India today with an increasing stock of essential military goods once carried over the Burma Road. Only the highest priority material now is being flown in, but it includes all varieties of small arms, light ammunition, tools, machinery, and medical supplies. However, by next autumn, the planes will be delivering many thousands of tons monthly and will be approaching the capacity of the mountainous old Burma Road, declared an American assisting in the operations.

"The air transport from India is carried on in the face of difficulties sometimes fantastic," he reported. "Under the best of conditions the pilots must clear 14,000-foot mountains. Air currents are rough, but they get through."

A plane carrying Brig. Gen. Earl L. Naiden, a member of Maj. Gen. Lewis H. Brereton's staff, dropped 1,000 feet in a down draft, forcing several passengers against the cabin ceiling.

"Although several roads are being built from India to serve China, despite the use of masses of machinery and thousands of laborers, it will be several months before any could be of service. That," stated the expert, "emphasizes the importance of the air-freight service."

## Navy Instrument Check

The Navy Dept. recently established a basic research project on problems relating to the operation of specialized aviation instruments at the Mellon Institute of Industrial Research, University of Pittsburgh. The scientifically trained personnel working on this project in behalf of the Bureau of Aeronautics includes the following members of the Mellon Institute: Dr. Charles E. Barker, George E. Alter, and Charles E. McKnight. Other specialists will be added to the staff as the research progresses.

A broad survey of the problems involved is being made by Dr. Barker with the cooperation of the Navy Dept., various American instrument manufacturers, and other government laboratories.

## RAF Training Stopped

Awarding of primary flight certificates to the latest class of RAF cadets at Carlstrom Field, Arcadia, Fla., marked the end of training of British youths. Jack Hunt, Riddle Aeronautical Institute manager, reports. In the future, only American cadets will be trained at the field.

Certificates have been awarded also to the fifth class of American cadets completing primary training at nearby Dorr Field, also part of Embry-Riddle. Lt. Jack C. Pinkerton, public relations officer, pointed out that there have been no flight fatalities or serious injuries at the field to date.

## Flight Strip Construction Started, War Dept. Reports

WITH RELEASE of these first photographs on the subject, the Army Air Forces last week reported that construction has been started on the first of a number of flight strips to be developed in conjunction with the Public Roads Administration as auxiliary landing fields for military aircraft.

While the exact locations of the roadside landing strips will be withheld for military reasons, the Air Forces stated that the initial project is located in "a strategic area on the Atlantic seaboard," describing it as "capable of handling even the largest bombardment planes now being flown by the Air Forces."

Studies have been completed on similar sites throughout the country, and construction of flight strips will begin as rapidly as possible according to priorities assigned by the Air Forces. Actual building of the flight

strips is the responsibility of the PRA and the various state highway departments in which the landing areas are to be located. Personnel and facilities released from peace-time roadbuilding activities are being used in the construction.

The development projects are being carried out under the Defense Highway Act of 1941, which authorizes construction of flight strips adjacent to public highways as supplements to regular air bases and airports. The work is proceeding with an initial fund of \$5,000,000 made available last Dec. 17, and estimates for additional money to carry the program forward are now being drawn up by the PRA and Air Forces.

Surveys have indicated that a flight strip for handling the largest bombers can be constructed at a cost averaging only about one-

## Price Change

Effective June 1, the single copy price of AMERICAN AVIATION will be 20c. There will be no change in subscription rates.

twentieth of that of a large air base, the difference resulting mainly from the fact that the flight strip has a single runway extending in the direction of the prevailing wind, from which taxiways may lead to concealed or camouflaged dispersion points for aircraft. No large hangar or repair facilities will be located on the strips.

As a further advantage, flight strips can be constructed in a fraction of the time required to build more complicated landing areas, with considerable savings in steel and other critical materials.

## Talbott Named Deputy Director of WPB Division

HAROLD E. TALBOTT, on leave as chairman, executive committee, Electric Auto-Lite Co., Toledo, O., on May 1 was appointed deputy director of the Production Division of WPB, assigned to direct the activities of the present Aircraft Branch, plus a newly formed Radio Branch.

A spokesman said this will in no way affect the personnel or work of the Aircraft Branch beyond reporting to Talbott rather than direct to William H. Harrison, director of the WPB's Production Division.

Technically, the Aircraft Branch is not changed, it was said. Merrill C. Meige still heads the branch.

## Flying Record Set

A record of more than a year of accident-free operation under all sorts of flying conditions has been logged by the pursuit squadrons under the command of Capt. Marvin L. McNickle, Army Air Forces.

McNickle commanded the 39th pursuit squadron during 1941 and the early part of this year. Since then he has been in command of the 307th squadron of the 31st pursuit group.

## Wanted LIAISON REPRESENTATIVE

A man who has had aircraft production experience. Some engineering preferable. Inspection and planning helpful. Must be willing to travel. Write today, giving complete details as to training, experience, married or single, citizenship, salary expected, etc.

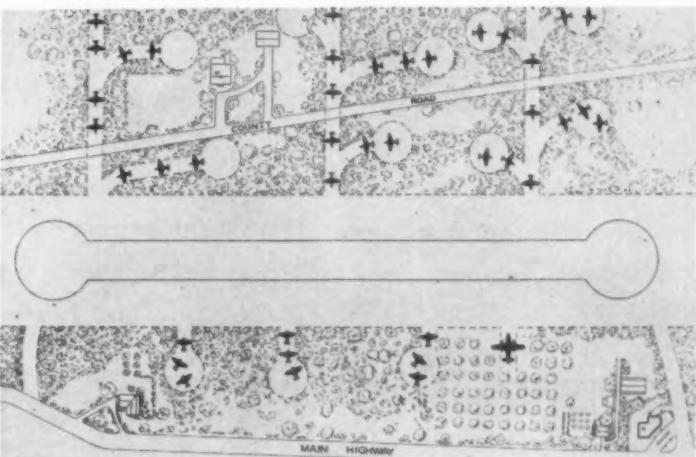
THE WACO AIRCRAFT COMPANY  
Troy, Ohio



Strange Traveler for Pennsylvania Turnpike  
Douglas A-20 Bomber Prepares for Takeoff

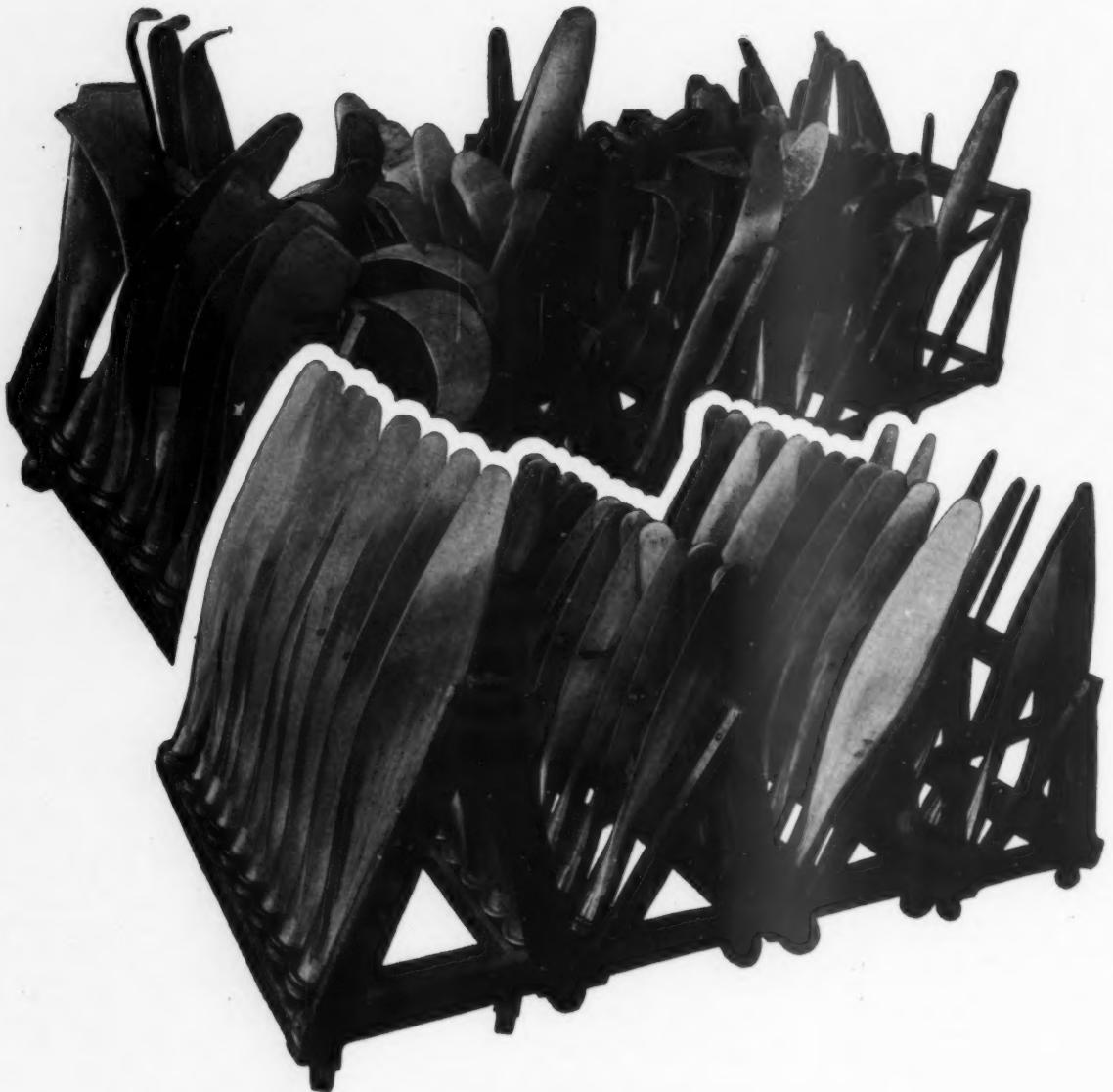


After Alighting Alongside Highway  
Bell Airacobra Wings Upward from Flight Strip



Flight Strip Development Illustrated  
Showing Method of Dispersing and Concealing Planes

# SAVED . . . TO FIGHT AGAIN



Out on the fighting front, gunfire and crash landings take a heavy toll of propeller blades. 2½ years of wartime experience have proved that successful repairs can be made on over

80% of all Hamilton Standard blades damaged in combat.

This adaptability to repair of Hamilton Standard duralumin-type blades means a vital saving in time and materials.

## HAMILTON STANDARD PROPELLERS

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ONE OF THE THREE DIVISIONS OF UNITED AIRCRAFT CORPORATION

## Army-Navy Personnel

For a hazardous and technically difficult flight in a bombing plane from Washington, D. C., to the Netherlands East Indies "on an urgent and vital mission," the War Dept. has awarded decorations to eight officers and enlisted men of the Air Corps. The officers receiving the Distinguished Flying Cross: Lt. Kenneth L. Akins, co-pilot; Lt. Charles T. Allen, first navigator; Lt. Richard T. Kight, pilot; Lt. John G. Mee, second navigator.

Director of the Division of Aviation, U. S. Marine Corps, Col. Ralph Mitchell has been promoted to the rank of Brigadier General. Gen. Mitchell recently completed a flying tour which



Mitchell

took him to many of the nation's major military airfields.

Lt. Col. James H. Doolittle, Army Air Forces, has been nominated by the President for temporary promotion to the grade of Brigadier General. Returning to active duty July 1940 as a major, Doolittle was promoted to Lieutenant Colonel in Jan. 1942.

D. W. Haarman, commander of the Air Corps Training Detachment at Ryan School of Aeronautics has been promoted to the rank of captain.

## Germany Has Failed To Solve U.S. Secret Bomb Sight—Norden

ALL THE talk about the Nazis having the secret of the U. S. Norden bomb sight is baseless, according to Theodore H. Barth, president of Carl L. Norden Inc., and one of the designers of the famous Norden bomb sight.

Germany has failed completely to solve the principle of the American secret, it is claimed. "Examination of German planes shot down as recently as a few months ago showed the use of a sight of astounding crudeness," Norden said. These sights, he added, have not even the remotest suggestion of the function of the Norden sight.

The statements by Norden, authorized by the Navy, disclosed that the U. S. bomb sight also functions as an automatic pilot to guide planes to their targets and hold them true while bombs are dropped.

## Foreign Technicians

One hundred aviation technicians from countries south of the U. S. are in training at the Casey Jones School of Aeronautics, Newark, N. J., and LaGuardia Field, New York, which has expanded to occupy 13 buildings with a total floor space of a half million square feet.

The faculty at the rapidly expanding schools now totals over 200.

## Gen. Chennault Praises Allison-Powered P-40s

PERFORMANCE of the only American designed and built liquid-cooled engine now being used by Allied air forces "has been absolutely amazing under the most grueling wartime fighting conditions," Brig. Gen. C. D. Chennault

has cabled workmen of the Allison Division of General Motors from Burma.

Gen. Chennault commands the American Volunteer Group which has felled more than 200 Jap planes with its Allison-powered Curtiss P-40s in Burma and China "without to our knowledge losing a pilot or airplane due to engine failure."

## Training Command Moves to Ft. Worth

The Flying Training Command of the Army Air Forces will be moved from Washington, D. C., to Ft. Worth, Tex., by July 1. Department officials claim that between 150 and 200 employees and officers will be transferred.



## Uncle Sam's Business is Urgent

As war production shifts into high gear, the demand for air transportation has increased many-fold. Today, airplane seats are a precious commodity that must be utilized to the fullest advantage on every flight.

Uncle Sam's business is urgent and the space needed for the swift movement of men and materials should not be jeopardized by non-essential travel. That is why we suggest you restrict use of our facilities to the most urgent needs.

If your trip is essential to the war effort, then, by all means, use air travel. If not, then contact our ticket office for information on space availability.

### THE NEW War-Time Etiquette OF AIR TRAVEL

1. Don't be a "NO-SHOW." If you cancel your reservation, do so in time to allow someone else to use your seat.
2. Check in early at the airport. The government specifically requests airlines to maintain "on-time" performance.
3. Cut your baggage weight to a minimum. Every pound of loading capacity is needed for passengers and cargo.
4. Use daylight flights whenever possible. Day planes have almost twice the capacity of sleeper planes.
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# German Military Aircraft Specifications

(Continued from page 3)

**ENGINE** One DB601N 12 cylinder, inverted-vee liquid cooled. 1,200 h.p. at 16,500 ft. The radiators are fitted in the wing roots, the air flow being governed by mechanically operated trailing edge flaps.

**AIRSCREWS** Three bladed V. P. metal.

**ARMAMENT** 1 x 15-mm or 20-mm shell gun firing through spinner, and 2 x 7.9-mm guns forward fuselage.

The pilot's head and back are fully protected.

Normal flying weight 6,050 lb. Maximum speed 370 m.p.h. at 18,000 ft. Cruising speed 310 m.p.h. at 16,500 ft. Service ceiling 37,000 ft. Range 440 miles. Endurance 1.4 hours. Fuel tankage 88 gallons.

**PERFORMANCE** NOTE: The Me109F can be adapted to carry a bomb load up to 550 lb or, alternatively, external jettisonable fuel tanks giving it a greatly increased range.

**DESIGNATION** JUNKERS Ju90 Transport. (Pictured below.)

**DIMENSIONS** Span 115 ft. Length 85 ft. Height 21 ft. Wing area 1,800 sq. ft. net.

General purpose troop carrier and transport.

3 to 7.

**GENERAL DESCRIPTION** Four-engine, low-wing monoplane of metal construction. The wings are fitted with landing flaps and the tail units has twin fins and rudders. The undercarriage is retractable.

**ENGINES** Four Jumo 211 liquid-cooled, inverted-vee. 1,150 h.p. at 13,000 ft. Normal flying weight 51,000 lb. Maximum speed 250 m.p.h. at 14,000 ft. Cruising speed 225 m.p.h. at 14,000 ft. Service ceiling 18,000 ft. Range 780 miles at cruising speed. 1,600 miles at economical speed.

**PERFORMANCE** NOTE: As a troop transport the normal seating capacity is 40. There is a version of the Ju90 fitted with BMW air-cooled radial engines.



Junkers Ju90 Transport  
Normal Seating Capacity is 40

**DESIGNATION** JUNKERS Ju52 Transport and Glider Tug.

**DIMENSIONS** Span 96 ft. Length 62 ft. Height 18 ft. Wing area 1,070 sq. ft.

**DUTY** Freight and troop transport and glider tug.

3.

**GENERAL DESCRIPTION** Three engine, low wing, cantilever monoplane of metal construction. The wings have a slight dihedral and an even taper from the fuselage to the tip. The whole trailing edge of the wing is hinged as landing flaps and ailerons. The fuselage is of rectangular section and is covered with a skin of corrugated sheet-metal. The twin tail unit is adjustable for trim. The undercarriage is fixed.

**ENGINES** Three BMW132 air-cooled radials. 850 h.p. at 11,500 ft. 1 or 2 x 7.9-mm guns in dorsal positions and 1 x 7.9-mm gun ventral (on bomber version).

**ARMAMENT** Normal flying weight 22,000 lb. Maximum speed 195 m.p.h. at 8,000 ft. Cruising speed 170 m.p.h. at 10,000 ft. Service ceiling 27,000 ft. Range 850 miles. Endurance 5 hours. Freight load 2,000 lb. Petrol tankage 530 gallons.

**PERFORMANCE** NOTE: With a freight load of 5,000 lb. and a fuel tankage of 173 gallons, the range is reduced to 250 miles. The Ju52 is the standard general purpose transport, troop carrier and glider tug in use by the G. A. F. The normal number of fully equipped troops carried by this aircraft is 16 to 18.

**DESIGNATION** JUNKERS Ju88 Night Fighter.

**DIMENSIONS** Span 65 ft. Length 47 ft. Height 16 ft. Wing area 520 sq. ft. net.

**DUTY** Night fighting and intruder operations.

3.

**GENERAL DESCRIPTION** This aircraft is a development of the Ju88 bomber and is similar with the exception that the nose of the fuselage is panelled in metal and that the armament is different. The dive brakes are omitted.

**ENGINES** Two Jumo 211 liquid cooled, 12 cylinder, inverted-vee. 1,200 h.p. at 16,500 ft.

**AIRSCREWS** Three bladed metal V. P.

**ARMAMENT** 3 x 7.9-mm guns and 1 x 20-mm shell gun in the nose of the fuselage. Alternative nose armament 3 x 7.9-mm guns and 3 x 20-mm shell guns. 1 or 2 x 7.9-mm guns dorsal. 1 x 7.9-mm gun ventral.

**ARMOR** A steel bulkhead is fitted across the nose in front of the pilot, thickness 11-mm and the pilot's windscreen is of 2½ in. bullet-proof glass. The pilot's seat and the upper and lower gunners are also fully protected.

**PERFORMANCE** Normal flying weight 24,000 lb. Maximum speed 290 m.p.h. at

18,000 ft. Cruising speed 240 m.p.h. at 16,500 ft. Service ceiling 24,000 ft. Range 1,220 miles. Endurance 5.1 hours. Fuel tankage 575 gallons. Internal bomb load 1,100 lb. Without bombs the range is increased to 1,750 miles and the endurance to 7.3 hours with additional internal fuel tankage.

**NOTE:** This aircraft can be fitted with external jettisonable fuel tanks giving a maximum range up to 2,150 miles.



Official Photograph, U. S. Army Air Corps

Heinkel He111 Bomber  
Range 1,540 Miles, Endurance 6.85 Hrs.

**DESIGNATION** HEINKEL He111 Bomber. (Pictured above.)

**DIMENSIONS** Span 74 ft. Length 53.7 ft. Span 14 ft. Wing area 840 sq. ft. net.

**DUTY** Long range bombing torpedo dropping reconnaissance.

4 or 5.

**GENERAL DESCRIPTION** Twin-engine, low-wing monoplane of stressed-skin, all-metal construction. The wings have a sharp sweep back to the leading edge and are fitted with flaps. The fuselage is of oval section and the tail unit is of monoplane type with single fin and rudder, the tailplane being elliptical in outline. The nose of the fuselage is panelled in perspex and has a free 7.9-mm M. G. "off-set" mounted in the extreme tip. The undercarriage retracts rearwards into the engine nacelles and the tailwheel is fixed.

**ENGINES** Two Jumo 211 12 cylinder, liquid-cooled inverted-vee. 1,150 h.p. at 15,000 ft.

**AIRSCREWS** V.D.M. electrically operated V. P. metal, three bladed.

**ARMAMENT** 2 x 7.9-mm guns forward fuselage. 1 x 7.9-mm gun dorsal. 1 or 2 x 7.9-mm guns or 1 x 7.9-mm and 1 x 20-mm guns ventral and 2 x 7.9-mm guns lateral. 1 x 7.9-mm remote controlled fixed gun or grenade tube are occasionally fitted in the tail.

**PERFORMANCE** The pilot's seat and the rear upper and lower gun positions are extensively armored.

Normal flying weight 25,500 lb. Maximum speed 260 m.p.h. at 17,000 ft. Cruising speed 225 m.p.h. at 17,000 ft. Service ceiling 25,500 ft.

**DESIGNATION** Range 1,540 miles. Endurance 6.85 hours. Fuel tankage 760 gallons. Bomb load 1,760 lb.

**NOTE:** With a bomb load of 4,400 lb. the range is reduced to 760 miles and the endurance to 3.4 hours. Under certain circumstances the bomb load can be increased to about 2½ tons. The normal fuel tanks are of the self-sealing type and are fitted in the wings. The He111 may be equipped for assisted take-off.



Official Photograph, U. S. Army Air Corps

Junkers Ju87 Dive Bomber  
Has Inverted Gull Wings

**DESIGNATION** JUNKERS Ju87 Dive Bomber. (Pictured above.)

**DIMENSIONS** Span 45.3 ft. Length 36.5 ft. Height 13 ft. Wing area 305 sq. ft. net.

**DUTY** Dive bombing.

**GENERAL DESCRIPTION** Single-engine monoplane with inverted gull wing. The aircraft is of metal construction throughout. The fuselage is of oval section and together with the wing has a stressed-skin metal covering. The cockpits are enclosed by a perspex cover and a transparent panel is provided in the floor for the use of the pilot during his approach to the target. The braced tailplane has square-cut tips and an angular fin. The undercarriage is fixed and the wheels are fitted with spats. Dive brakes are fitted beneath the wing outboard of the undercarriage.

**ENGINES** One Jumo 211 12 cylinder, inverted vee, liquid-cooled. 1,150 h.p. at 16,000 ft.

**ARMAMENT** 2 x 7.9-mm guns in wings. 1 x 7.9-mm gun dorsal.

**PERFORMANCE** Normal flying weight 9,400 lb. Maximum speed 210 m.p.h. at

(Turn to page 14)

## German Fighters, Bombers and Gliders

(Continued from page 13)

16,000 ft. Cruising speed 175 m.p.h. at 15,000 ft. Service ceiling 24,500 ft. Range 370 miles. Endurance 1.8 hours. Fuel tankage 105 gallons. Bomb load 1,100 lb.

NOTE: Under certain conditions the bomb load can be increased to 2,200 lb. giving a range of 360 miles and an endurance of 1.75 hours. This aircraft can be fitted with external jettisonable fuel tanks, increasing the range to 875 miles.

**DESIGNATION** DORNIER Do217 Bomber. (Pictured below.)  
**DIMENSIONS** Span 62 ft. 5 in. Length 56 ft. 6 in. Wing area 610 sq. ft. gross.  
**DUTY** Bombing.

**CREW** 4.  
**GENERAL DESCRIPTION** This aircraft in most respects resembles a scaled-up version of the Dornier Do172 and is a shoulder-wing monoplane of stressed-skin metal construction. The fuselage is of oval section and the tail unit has twin fins and rudders. The nose is panelled in perspex. The undercarriage retracts rearwards into the engine nacelles. The tailwheel is retractable.

**DIVE BRAKES** Dive brakes can be fitted.  
**ENGINES** Two BMW801 14-cylinder, two-bank, air-cooled radial. 1,500 h.p. at 17,000 ft.

**AIRSCREWS** Three-bladed laminated wood, V. P.  
**ARMAMENT** 1 x 15-mm and position for 1 x 7.9-mm gun forward fuselage. 2 x 7.9-mm guns forward lateral. 2 x 7.9-mm guns lateral. Probably 2 x 7.9-mm guns dorsal. 1 x 7.9-mm or 1 x 20-mm gun ventral.

**ARMOR** The aircraft is extensively armored.  
**PERFORMANCE** Normal flying weight 32,700 lb. Maximum speed 270 to 280 m.p.h. at sea level. Cruising speed 255 m.p.h. at 17,000 ft. Service ceiling 22,500 ft. Range 1,010 miles. Endurance 4 hours. Fuel tankage 650 gallons. Bomb load 4,400 lb.

NOTE: After dropping the bomb load the maximum speed can be increased to 325 m.p.h. at 17,000 ft. and the service ceiling increased to 29,000 ft. Under certain circumstances the bomb load can be increased to 6,600 lb.



Official Photograph, U. S. Army Air Corps

### Dornier Do217 Bomber

Uses 3-Bladed Laminated Wood Prop

**DESIGNATION** MESSERSCHMITT Me110 Twin engined Fighter. (Pictured below.)  
**DIMENSIONS** Span 53 ft. 4 in. Length 40 ft. 6 in. Height 11 ft. 6 in. Wing area 380 sq. ft. net.

**DUTY** Long range fighting.  
**CREW** 2.  
**GENERAL DESCRIPTION** Twin-engined, low-wing monoplane of metal construction. The narrow tapered wings are of single spar structure and the cantilever tail unit has twin fins and rudders. The fuselage is of oval section and has a stressed-skin metal covering. The control surfaces only are fabric covered. The undercarriage retracts rearwards into the engine nacelles. The tailwheel is fixed. Two DB601N 12 cylinder, inverted-vee, liquid-cooled. 1,200 h.p. at 16,500 ft.

**ENGINES:** V. D. M. variable pitch, full feathering type.  
**AIRSCREWS** 4 x 7.9-mm guns forward fuselage. 2 x 20-mm shell guns forward fuselage. 1 x 7.9-mm gun dorsal.

**ARMOR** A steel bulkhead is fitted behind the guns. The pilot's seat is fully armored and a bullet-proof pilot's windscreens is provided. In some cases there is further armor at the rear of the cockpit.

**PERFORMANCE** Normal flying weight 15,300 lb. Maximum speed 340 m.p.h. at 22,000 ft. Cruising speed 285 m.p.h. at 16,500 ft. Service ceiling 32,000 ft. Range 680 miles. Endurance 2.4 hours. Fuel tankage 280 gallons.

NOTE: This aircraft can be adapted to carry a bomb load up to 4,800 lb. In some cases external jettisonable fuel tanks are fitted giving a greatly increased range.



Official Photograph, U. S. Army Air Corps

**Messerschmitt Me110 Fighter**  
**Has Four Machine Guns, Two Cannon**

**GENERAL DESCRIPTION** High-wing, twin-boom monoplane glider, with central nacelle accommodating 23 fully equipped troops (including 2 pilots). The wing is of wooden construction, strut-braced, and tapering in chord and thickness. The wing tips are square, and are part plywood covered, part fabric. Fitted ailerons and flaps. Lift spoilers fitted to upper surface of wing. The twin tails and booms are of wooden construction. The nacelle, which is 37 ft. in length, is a tubular metal structure, hinged at the rear end to facilitate loading. Nose of nacelle panelled with perspex. Jettisonable wheeled undercarriage. Landing effected on 3 skids. The forward skid is retracted in flight. Four M. G.

**ARMAMENT** MAX. FREIGHT CAPACITY TUG 5,300 lb.  
**GENERAL DESCRIPTION** Usually Ju52.

**DESIGNATION** DFS230 Glider.  
**GENERAL DESCRIPTION** Span 71.5 ft. Troop and freight transport. 1 pilot.  
**GENERAL DESCRIPTION** High-wing monoplane glider of mixed construction. Fuselage of rectangular section. Tail unit has single fin and rudder. Accommodation for 10 fully equipped troops including pilot. Total disposable load 2,800 lb.  
**ARMAMENT** An infantry M. G. is sometimes fitted on the side of the fuselage firing forwards.  
**TUG** Usually Ju52.

**DESIGNATION** HENSCHEL Hs126 Army Co-operation.  
**GENERAL DESCRIPTION** Span 47.6 ft. Length 35.6 ft. Height 12.2 ft. Wing area 30 sq. ft. net.  
**DUTY** Reconnaissance and Army Co-operation.  
**CREW** 2.  
**GENERAL DESCRIPTION** Parasol monoplane, all-metal monocoque construction. The undercarriage is fixed and the wheels are fitted with spats. The fuselage is of oval section and the tail of monoplane type with single fin and rudder, the tailplane being fitted half-way up the fin.  
**ENGINE** Bramo-Fafnir 323 air-cooled radial. 830 h.p. at 13,000 ft.  
**AIRSCREW** Three-bladed metal V. D. M. Variable pitch.  
**ARMAMENT** 1 or 2 x 7.9-mm guns forward fuselage. 1 x 7.9-mm gun dorsal.  
**PERFORMANCE** Normal flying weight 7,250 lb. Maximum speed 230 m.p.h. at 15,000 ft. Cruising speed 190 m.p.h. at 13,000 ft. Service ceiling 27,000 ft. Range 440 miles. Endurance 2.3 hours. Fuel tankage 113 gallons. Bomb load 220 lb.

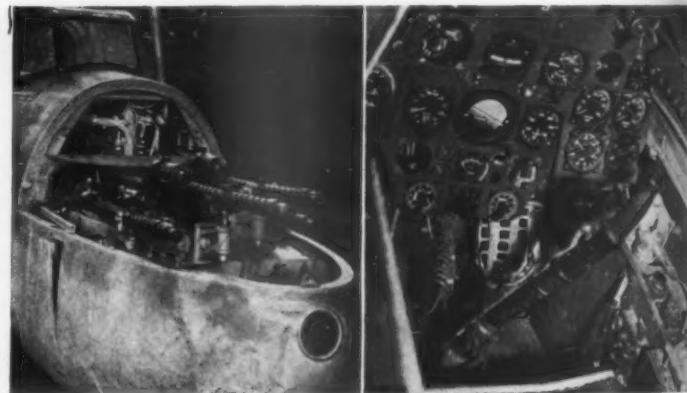


Photo Courtesy Vultee Aircraft Inc.

**Me 110 Equipment:** This Messerschmitt 110, studied by Vultee engineers, carried four machine guns, operated by the pilot, in the upper nose, and two 20 MM cannon in the lower nose section, manned by the navigator-radio operator. At right, the instrument panel shows a set of the most modern instruments being manufactured in Germany.

## The Me 110 Analyzed

ENGINEERS of Vultee Aircraft Inc., Vultee Field, Cal., have prepared a detailed report on the German Messerschmitt 110-C, copies of which have been made available to the U. S. aircraft industry and the press. One of the Me 110s was sent by the British Air Ministry to Vultee for study, after it had been shot down over England.

"The airplane was received in exceptionally fine condition, with practically every piece of equipment in working order, which enabled us to conduct detailed studies and tests of the more interesting equipment and structure," said R. W. Palmer, Vultee's vice president in charge of engineering.

**DESIGNATION** GOTHA Go242 Glider.  
**DIMENSIONS** Span 79 ft. Length 52 ft. 6 ins.  
**DUTY** Troops and freight transport.  
**CREW** 2 pilots.



## "By the Dawn's Early Light"



HE first low ray of the young morning lights his untroubled face, peaceful and serene.

If there are dreams behind the closed eyelids, they are boyish dreams of bikes and BB guns and the heroic exploits of Superman.

If there is concern here, it is a sort of puzzlement over what's come over Mom and Pop of late . . .

Pop doesn't get home so early as he used to, somehow isn't quite as ready to romp and play as once he was.

And Mom — she's quieter, and every now and then is caught looking at him, long and slow, a brooding tenderness in her eyes.

War? Sure, he knows there's a war. It's in the headlines, names of faraway lands, unreal as any fairy tale.

Pop says they can't get new tires for the car because of the war; and instead of giving him nickels now and then to spend, brings home War Savings Stamps that he says will be spending money "after the war's won."

But what's all this got to do with a little boy?

He doesn't know, of course, that even while he sleeps here in the dawn's early light, somewhere soldiers, sailors and airmen stand vigilant guard — for his sake.

He doesn't know that while kids like him play their shouting games of dive-bomber and mock air alarm, real American planes are splitting the sky, real American bombs are arrowing to their targets, real American machine guns are chattering forth destruction — for his sake.

He doesn't know that vast factories hum in angry haste through seven three-shift days a week — that to help America reach its goal of 60,000 war planes this year, plants like Goodyear Aircraft are pouring forth countless airplane wings, tails, nacelles, stabilizers, wheels, brakes and other subassemblies — for his sake.

He doesn't realize, you see, that *he* is the coming America.

He doesn't know *he is the future*, here with us today, living emblem of the one thing in

the world worth fighting for — hope, and promise, the chance for a better life.

He doesn't know that as long as boys can be boys, men can be *men* — that Mom and Pop understand that, as he will himself some day when he has a son of his own.

It won't be the billions we spend that will win this war, not all our factories and the machines that are in them — it will be the things men see in the faces of little boys.

It will be the willingness of fathers not only to fight, but to work and sacrifice in fierce guardianship of those they love.

So may his sleep be sweet.

Some day he'll take up the burdens, the fruitful tasks of manhood; it is our job now to see that he can take them up as a free man, fit to fashion a better world.



# All American Aviation, Air Pick-Up Pioneer, Celebrates 3rd Anniversary

## Company Serves 112 Communities In Six States

**A**LL AMERICAN Aviation Inc., the youngest of the nation's air carriers, on May 12 observed the third anniversary of the establishment of its air pick-up system by which cargo is collected and delivered by airplane in flight.

Marking the occasion, the company released operating statistics showing that since May 12, 1939, when service was inaugurated, its pick-up planes have flown 1,712,105 revenue miles, made 92,934 pick-ups and deliveries, transported 375,762 pounds of air mail, 49,921 pounds of air express, and completed approximately 94% of schedules without a serious mishap to equipment or cargo.

Since the beginning of All American's pioneering work, nine other companies have filed applications with the Civil Aeronautics Board for permission to establish pick-up service in 26 additional states, serving 1,400 communities now without air service, and adding 25,000 route-miles to the present air transportation system.

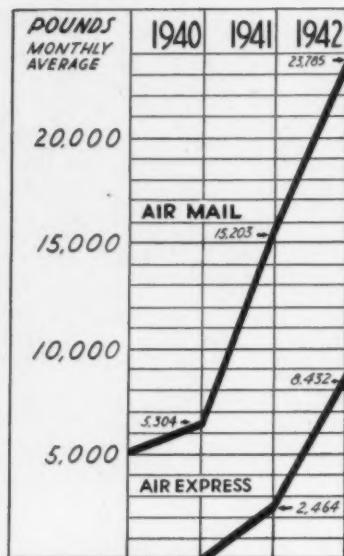
The CAB has said on more than one occasion that it has been studying All American's operations as a model, to determine whether more companies should be permitted to enter the field.

In April, All American's traffic reached its highest peak, air mail volume totaling 23,785 pounds and air express 8,432 pounds.

On the floor of the House, Rep. Jennings Randolph (D., W. Va.), who sponsored the air pick-up legislation, called attention to the birthday and to the record of the service which Congress originally authorized the Post Office Dept. to conduct as an experiment.

### Urge Expansion

Rep. Randolph expressed regret that the pick-up service had not been expanded more extensively since the P.O. pronounced it a success two years ago. He pointed out that in the present national emergency, when speed in communication and transportation are essen-



Growth of Pick-up

tial, there are many places in the country where pick-up service could now make a material contribution to the war effort.

The present service, Rep. Randolph asserted, is carrying enough air mail to make it self-supporting. No other airline in the country, he said, reached this point in so short a time. He expressed the opinion that a nationwide system of air pick-up lines could produce sufficient air mail revenue to support itself within a relatively short time.

In the beginning, All American's service was operated over two experimental routes, one of which extended from Pittsburgh to Philadelphia via 28 intermediate points, and the other from Pittsburgh to Huntington, W. Va., via 28 points.

This territory was selected by the P.O. for the experiment because the difficult flying conditions, both from the standpoint of weather and terrain, encountered in this region afforded an opportunity to make the test under the most exacting circumstances.

The experimental service lasted a year. Reporting to Congress on the results, the Postmaster General stated that the record of the service for a new type of operation "is perhaps without precedent when all conditions are considered."

CAB in 1940 placed the service on a permanent basis by granting the company a certificate of convenience and necessity for five routes. These routes radiate from Pittsburgh, where the company's operations office is located, to Philadelphia and Williamsport, Pa.; Jamestown, N. Y.; and Huntington, W. Va., covering 112 cities and towns in Pennsylvania, New York, West Virginia, Delaware, Ohio, and Kentucky. Route mileage totals 1,386 miles.

Richard C. du Pont, who achieved distinction as a pioneer in the development of gliding in the U. S. and once held the American soaring and altitude records, is president of All American. Under his supervision, the air pick-up system with which the service was first begun has been completely changed as a result of experience gained in the experimental operation. The new equipment has greatly simplified and increased the efficiency of the pick-up operation.

Other officers of the company are Harry R. Stringer, vice president-traffic-advertising-public relations; H. R. Bazley, vice president-operations; Charles W. Wendt, treasurer, and Henry A. Wise Jr., secretary and general counsel. The board of directors includes Grover Loening, Arthur P. Davis, and Richard P. Dunn.

### Military Uses

For some time reports have persisted that both the Army and the Navy were studying the air pick-up system developed by All American for military application, and that the company is now engaged in developing equipment capable of picking up much heavier loads with the object of using it in launching and towing gliders, and for other military purposes.

In a recent newspaper article, Lewin B. Barringer, glider specialist of the Army Air Corps, mentioned the possible use of the air pick-up in launching and towing gliders. His article stated that a glider in which he was a pilot was picked up by a pick-up plane in a test conducted by the Air Corps.

An official Air Corps release from Wright Field a short time ago mentioned this experiment, stating that a glider stationary on the ground had been picked up by an airplane flying at a speed of 100 mph. It is understood that the pick-up in this test was made by one of All American's regular pick-up planes using its normal equipment.

Officials of the company, however, have refused to comment.

All American has applied to the CAB to extend its air pick-up lines to 237 communities in New Jersey, Connecticut, Rhode Island, and Massachusetts.

## Favors Approval of Pan American Guatemalan Deal

ACQUISITION of control of Aerovias de Guatemala, S.A., by Pan American Airways Inc. will not be inconsistent with the public interest and will not result in creating a monopoly which will restrain competition or jeopardize any other air carrier, according to an advisory report issued Apr. 21 by CAB Examiner J. Francis Reilly.

The examiner disagreed with PAA's contention that it does not control Aerovias. Although PAA does not hold the majority of that company's stock, nevertheless it is in control, Reilly asserted.

However, he added, this control will not injure any other airlines and is "undeniably in the interest of national defense."

All money used in the organization of Aerovias was supplied directly by, or through the aid of Pan American, including a loan to Alfred E. Denby, Aerovias president by a New York bank, Reilly said. Denby borrowed from the bank to purchase stock in Aerovias, the loan being guaranteed by Pan American. The only security Pan American had for this guarantee was the pledge with it by Denby of his stock, according to the report.

"In addition, the inauguration and continuance of the company's operations were due solely to the financial assistance of Pan American," it continued. "All of these advances . . . were unsecured. Under a bona fide relationship of debtor and creditor it seems quite certain that Pan American would have demanded collateral sufficient to secure the obligations of Aerovias to it . . . It is contrary to common sense and experience as well as to sound business judgment to assume that Pan American would render unsecured financial assistance to Aerovias unless there was some understanding that Pan American would possess the power to control the affairs of Aerovias in order to insure protection of its investment."

"The need for such understanding is emphasized by the extremely limited airline experience of Denby, who, Pan American asserts, controls Aerovias. To neglect to receive some assurance that it would possess the right to exercise such power of control if it so desired might be deemed an adverse reflection on Pan American's management."

### PAA Has Control

The ramified financial arrangements and the terms of contracts executed in connection therewith, Pan American's stock voting rights, its legal right under certain conditions to keep Denby from voting his stock, and its "obvious power" over many key employees of Aerovias "conclusively show that Pan American, at such times as it may choose, can procure whatever action it may desire on the part of the officers and employees of Aerovias," Reilly stated.



Bazley      Stringer      Wise      Wendt  
Top Officials of All American Aviation

AIR EXPRESS

# The Air Pick-up

AIR MAIL

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# Ten thousand to One.



NEVER before in all history has so much depended on the man behind the man behind the gun. His battle lines are production lines; his weapons are the tools of his trade. Quotas be damned; whatever quantities are asked he must strive to exceed. His is the colossal task of changing "too little and too late" to "an abundance and on time."

There is an exaltation in mortal combat that drives men to heroic deeds. Medals of honor and a nation's gratitude justly reward their courage. For every hero so honored there are 10,000 unsung heroes in the battle of production. They are the men and women who toil without the spur of conflict in absolute devotion to freedom's cause. They are the *builders* of victory.

Final triumph will be won by the side that works hardest and produces the most. If all America matches the unrelenting efforts of the aircraft industry there can be no doubt which side that will be. Are your sleeves rolled up? Have you the right to consider yourself one of the ten thousand to one?

*Douglas W. Douglas.*

PRESIDENT, DOUGLAS AIRCRAFT CO.

U. S. Army Photo  
Douglas Workers

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# Correll Plan for Strict Censorship of Air Transport News Backfires

## Milder Set-Up Expected; Neff Is 'Review' Head

By WAYNE W. PARRISH

EFFORTS by Col. Edgar S. Gorrell, president of the Air Transport Association of America, to place all airline publicity, speeches and advertising under strict censorship control with maximum fines of \$5,000 for single violations, have backfired to a considerable extent and established a new high record for industry gossip and dissatisfaction.

Like all such censorship moves, the ATA reaped considerable unwanted and embarrassing newspaper publicity.

Virtually every director of public relations and publicity manager in the air transport industry was opposed to the rigid censorship code but this group was not consulted or invited to sit in on the original meetings at which the code was drawn up.

Genesis of the code was unfavorable reaction in Official Washington (including the White House) toward certain airline advertisements telling the public that there were plenty of seats for sale despite priorities. Certain airline publicity and photographic releases playing up movie stars and other types of non-war travelers, also were frowned upon in Washington.

Instead of relying upon individual company cooperation through the use of a suggested publicity code of war-time practices, Col. Gorrell sought to bind the entire industry in an outright censorship.

Highlight of the whole endeavor was the scorn heaped upon the censorship code by the government's own agencies established for the very purpose of judging what should and should not be published. The Office of Censorship, for example, was astounded at the rigidity of the airline code which went much farther than the government itself intends to go. Both the Army and Navy, likewise, considered that they were in a better position to judge what should and should not be censored than the Air Transport Association.

First inkling of the Gorrell Censorship Code came at the regular meeting of the Air Traffic Conference, a subsidiary organization of ATA comprised of airline traffic officials, on Mar. 30 in Chicago. At this meeting M. F. Redfern, ATC executive secretary, proposed the following resolution:

"Be it Resolved: '1. This resolution is adopted in order to assure most effective coordination among the members of the Air Traffic Conference in promoting the use of air transportation by the public in a manner most conducive to the successful prosecution of the war and in order to

assure fullest utilization of air transport facilities to that end and to no other; and the administration of, and action under, this resolution shall at all times be guided by the foregoing statement or purpose.'

"2. No member of the Conference shall issue to the public in written or in any other form any advertising, pamphlets, folders, speeches or any other publicity of whatsoever nature unless:

"a. Such publicity has first been submitted to and specifically approved by the duly constituted official or employee of the Air Transport Association, as designated by the President of such association, or

"b. Such publicity is consistent with and permitted by such rules as may be promulgated from time to time under the direction of the President of such Association.'

"3. This resolution shall be subject to arbitration under the Air Transport Rules of Arbitration."

Redfern submitted the above resolution following action of the Air Transport Association on Mar. 15 in adopting a general resolution authorizing Col. Gorrell to set up a clearing house for all publicity matters.

Several of the airline traffic men attending the Mar. 30 meeting balked at the original Redfern resolution, so Howard Westwood, general counsel for ATA, substituted the following for 2a of the original:

### Westwood Amendment

"Such publicity is consistent with and permitted by such rules as may be promulgated from time to time by the advertising committee of the Conference under the direction of the President of the Association."

Section 2b was abolished under the Westwood substitute.

After considerable discussion, the Air Traffic Conference adopted the following resolution, which is now in effect and is binding upon all members and their employees:

"All publicity of whatsoever nature, including, but not limited to, news releases and public utterances, written or oral, including publicity that is to appear in airline house organs, shall be submitted to the Air Transport Association in Washington, D. C., before release and shall not be released unless and until approved by that office."

"Exception: In the event of an emergency, such as an airplane accident, information of a factual nature may be released to the press and radio without the Air Transport Association's approval. When in doubt, phone or wire the Air Transport Association in Washington, D. C., for advice which will be given promptly."

Up to this point the airline publicity men were not brought into the discussions, but on Apr. 20, Col. Gorrell issued a memorandum over his signature to airline publicity representatives as follows:

"At the request of the members of the Air Traffic Conference, there is hereby called a meeting of the Airline Publicity and Public Relations representatives to be held at 10 A.M. Thursday, Apr. 23, at the Hotel Lexington, New York City.

"The purpose of this meeting is to discuss ways and means for the proper handling of air transport news in connection with the war effort of the industry, and to formulate rules and regulations in connection with the immediate handling of items which have a direct relation to the industry's war effort problems."

"Mr. Walter H. Neff, formerly of Pan American Airways, has been selected as head of the ATA Review Section, and all matters related to the industry's publicity and advertising problems will clear through him."

"Before attending the meeting, will

you kindly discuss with your executives all questions pertaining to the problems affecting publicity at this time and come to the meeting prepared to suggest general rules which may be laid down for the guidance of all concerned."

"As you have already been informed by memorandum No. 51 everything that comes out of your company for the public to see or hear—whether it be speeches by your executives or anybody else, whether it be publicity, advertising, radio programs—in fact, anything that the public sees or hears, comes under the Air Traffic Conference resolution passed in Chicago under date of Mar. 30, 1942, which carries with it a maximum fine of \$5,000—and please note that if line one has in it something which is wrong, that could cost you \$5,000; and if line two is wrong, that could cost you another \$5,000, etc."

"By order of the Directors in their last meeting, detrimental remarks, comments, advertising, publicity, radio programs, etc. etc.—or even thoughts bordering on the line of being detrimental, ought to be stopped."

"Please advise by wire who will attend the meeting for your company. EDGAR S. GORRELL, President."

Most of the airlines were represented by their publicity men at the New York meeting Apr. 23, but by some strange coincidence—probably an evidence that Col. Gorrell's code had not met with 100% acceptance—The Chicago Tribune appeared on that date with a long story from its New York bureau exposing the censorship code.

The Tribune headline read: "Air Lines Adopt Rigid Censorship At Secret Meet—Impose Drastic Penalty for Any Violation," and described the steps leading up to the action on the code and quoting several paragraphs from Col. Gorrell's memorandum.

### Dampened Effect

The newspaper article, it is understood, considerably dampened the effect of the Colonel's rigid control of all airline publicity, speeches, advertising—and "detrimental thoughts."

Just how the censorship code situation stands today is a question. The resolution adopted by ATC is in effect, and the ATA censorship office is functioning. But most airline men conceded that the rigid control which Col. Gorrell desired will melt into what many of the airline men wanted in the first place—a review office and a clearing house with discretion left up to the individual airlines.

As far as speeches and public utterances go, it is unlikely that the code will be adhered to. At least several airline officials indicated they would ignore the code.

Col. Gorrell stated in his memorandum that Neff was "formerly" of Pan American Airways, but actually he is on leave and was picked for the job because of his past experience in airline public relations and newspaper work. Highly regarded as an able publicist, Neff was reported to be most uncomfortable in his new post of censor. Latest word is that "censor" is rapidly becoming a "reviewer," since the censorship plan backfired.

### Correction

In reporting the re-election of Eastern Air Lines directors, AMERICAN AVIATION for May 1 inadvertently omitted Paul H. Brattain, first vice president, who was also re-elected a director. The error is regretted.

### Hanes and Adams

#### Named by Pan Am

JOHN W. HANES, former Undersecretary of the Treasury, and Charles Francis Adams, Secretary of the Navy under President Hoover, have been named members of the Pan American Airways board of directors.

Their election, which fills vacan-



Hanes

Adams

cies on the board, is subject to approval of the CAB.

Hanes is chairman of the finance committee of American Newspapers Inc. and a member of the board of United States Lines, steamship company. He is also a director of Glenn L. Martin Co., Bankers Trust Co., Johns Mansville, and Missouri, Kansas & Texas Railroad.

Adams is chairman of the board of State Street Trust Co., Boston, and is a director of American Telephone & Telegraph, General Electric, and Newport News Shipbuilding Co.

### CAB Investigates

#### United Accident

As this issue went to press, the Civil Aeronautics Board's safety bureau had started its investigation into the probable cause of the accident of a United Air Lines Mainliner near Salt Lake City on May 1, resulting in the death of 14 passengers and a crew of three.

The safety bureau ordered the following personnel to the scene of the crash: Robert D. Hoyt, assistant director of the bureau; William K. Andrews, chief of the accident investigation section; Ralph Reed, senior investigator at Ft. Worth, and Perry Hodgen, investigator at San Francisco.

The plane, en route from San Francisco east, crashed into a ridge about five miles from the airport. It was United's first accident since Dec. 4, 1940. Since that time the company had flown between 400,000,000 and 500,000,000 miles without fatality.

Among passengers were F. B. Vose, aeronautical sales manager of Sperry Gyroscope Co., and M. L. Patterson, general sales manager for the same company.

Crew members were Capt. Donald W. Brown, First Officer Harold Miner, and Stewardess Neva Cantwell.

# Panagra Urges CAB to Eliminate Pan American's 'Negative' Control

## Vote Deadlock Stymies Action, Company Claims

FOR THE SECOND time within four months, the fight between Pan American-Grace Airways and Pan American Airways has come into the open.

On Apr. 29, D. S. Iglehart, president of W. R. Grace & Co., appealed to the Civil Aeronautics Board to require PAA to divest itself of ownership of stock in Panagra "to such an extent as may be necessary to divest itself of its present negative control" of Panagra.

Grace and PAA each own 50% of the Panagra stock, and each has four members on the board of directors. This set-up, Panagra claimed, enables PAA, by negative vote or refusal to vote at all, to stymie many Panagra projects.

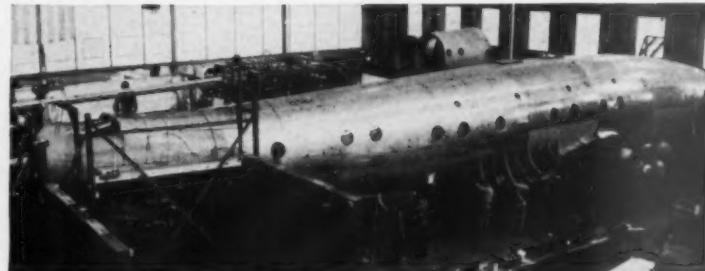
In a letter to the Board, Iglehart asserted that Panagra "has attained a stature which not only justifies but requires its existence as a completely independent air carrier. At the present time its ability as an independent air carrier to fulfill its obligations to the public, and to the governments of the U. S. and the eight South American countries which it serves is being suppressed and its growth and development are being restricted by Pan American . . . one of its own stockholders, in order that such development may not interfere with Pan American's own interests and conflict with its own supposed monopoly of foreign air transportation . . .

"We have long hesitated to place this matter before you, hoping that some other solution might be possible, but we have been reluctantly forced to the conclusion that there is no other way of remedying the existing situation."

### Opposed Expansion

A memorandum accompanying the letter claimed that a considerable part of Panagra's expansion has been accomplished "at the insistence of Grace and in the face of Pan American's opposition.

"Soon after the organization of Panagra in 1929 it developed that



A New Photo of the Hughes-Frye Super Transport  
The Constellation Will Find Its Place in the War Effort

Grace and Pan American entertained basically different philosophies regarding Panagra's status and destiny and this difference of view has continued.

Grace has at all times maintained the view that Panagra, while availing itself of the facilities and experience provided by both Grace and Pan American, should be an independent entity free to operate, develop and expand as its own welfare and the public interest might dictate and that its policies, organization and operations should be conducted independently and free of any adverse domination by either of its stockholders.

Pan American, on the other hand, has consistently maintained that Panagra should be administered primarily as a part of the so-called Pan American Airways System, that it should be held out to the public as a subordinate part of such system rather than an independent entity and that its policies and affairs should be determined and administered and its destiny controlled by what Pan American might from time to time deem to be in the best interests of itself and the Pan American Airways System."

### Charges Interference

Several instances of alleged interference by PAA with the activities of Panagra were given as follows:

1. PAA opposed Panagra's overland route across Columbia via Cali.

2. PAA delayed approval of Panagra's extension into Bolivia "to such an extent that Grace was itself obliged, in order to prevent its falling into the hands of a German-controlled company, to acquire the concession from the Bolivian government in its own name. Grace subsequently turned over this con-

cession to Panagra without payment."

3. PAA is preventing Panagra from making application for a route extension to the U. S.

4. PAA filed application for a stop at Camaguey, between Miami and the Canal Zone, although this stop would have destroyed connections with Panagra. Panagra's president protested to PAA and while discussions were going on, PAA "without prior notification of any kind to Panagra," asked CAB for an exemption order which would permit immediate inclusion of the Camaguey stop without a hearing. CAB granted the exemption, but later, at the request of Panagra's president, postponed inauguration of service until the stop can be made without prejudice to Panagra's service.

5. PAA directors on the Panagra board refused to allow the latter to file application for a New Orleans-Canal Zone route, at the time when PAA and American Export were seeking that line. Grace finally filed application on its own, which application is still pending.

"While conditions such as those above referred to may perhaps be suffered in time of peace, they are intolerable in time of war when the national interest demands that every instrumentality of defense such as an airline in foreign service be free to function to maximum efficiency unhampered by impediments of the character referred to," the memorandum said.

It added that the present situation whereby Panagra "must stand by helpless and watch other air carriers moving into and strengthening their position in an area where Panagra should be operating to complete its own service, is prejudicial to the interests of Panagra, to the public interest and to the national defense."

### New War Job

Reporting for work to replace a draftee in Pan American Airways' western maintenance department at Brownsville, Mrs. Clara Belle Smith was informed that her title would be "duration stockroom assistant."

### CCA Changes Name and Elects Directors

AT THEIR recent annual meeting at Wilmington, Del., the stockholders of Canadian Colonial Airways Inc. voted to change the name of the company to Colonial Airlines Inc. The management will take immediate steps to secure Civil Aeronautics Board approval.

At the same time, three new directors were elected: John J. Bergen, Edward S. Ridley, and E. P. Odenwalder. Directors re-elected included Sigmund Janas, Alexander C. Dick, Henry R. Powell, and Col. Edward J. S. Donovan.

### Panagra Increases

Pan American-Grace Airways on May 8 inaugurated a seventh weekly service from the Canal Zone to Lima, Peru, and has filed application with the Civil Aeronautics Board for additional schedules which, when authorized, will permit extension of this seventh service through to Buenos Aires.

### New PCA Directors

Five new directors were elected to the Pennsylvania-Central Airlines board at the annual meeting in Pittsburgh, Apr. 22. They are Frederick R. Crawford, executive vice-president of the company; R. S. Richards of Pittsburgh; Capt. J. H. Carmichael, PCA vice-president-operations; George R. Hann of Pittsburgh, and Jean Cattier of New York.

Directors re-elected were William V. Couchman, John W. Donaldson, Armand Erpf, Lorenz Iverson, George T. Ladd, John L. Loeb, C. L. McCune, S. Stewart Mitchell, C. Bedell Monro, and Henry Roemer.

All PCA officers were re-elected for the coming year.

### PAA Adds Service

Pan American Airways has increased service between Miami and the Canal Zone from six to seven trips weekly. Addition of this service brings to 28 the number of weekly schedules now operated between the U. S. and the Canal Zone.

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Boeing flight research men bring many of their problems down to earth — to the Strato-chamber, a sealed laboratory designed by Boeing engineers to reproduce at one time the intense cold and the extreme low-pressure conditions of the stratosphere.

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# \$4,400,000 Air Mail Pay Slash Recommended for Pan American

## Examiner Also Proposes Large Retroactive Cut

By ERIC BRAMLEY

PAN AMERICAN Airways would receive \$4,400,000 less air mail pay per year on its Latin American routes if the recommendations of CAB Examiner Francis W. Brown are adopted by the Board.

The company would also be forced to pay back to the government over \$4,000,000 from mail pay received during the period Aug. 22, 1939, to Apr. 1, 1942.

Rates recommended by Brown were: beginning Apr. 1, 1942, 46.31c per pay mail mile for a base load of 300 lbs. of mail, plus .3 mill per mail pound-mile for excess; for the period Aug. 22, 1939, to Apr. 1, 1942, \$1.02 per pay mail mile.

During the two years ended Sept. 30, 1941, PAA received an average of \$1.69 per pay mail mile.

Concerning the rate which would begin Apr. 1, 1942, Brown pointed out that there have been many developments affecting PAA's operations since the outbreak of war. He recommended, therefore, that this rate should be "upon the basis of the current level of operations and costs by interlocutory order subject to subsequent review and modification."

For the two-year period ended Sept. 30, 1941, the \$1.02 rate would mean that PAA would be subject to a retroactive reduction of about \$3,756,000, after the company had received a rebate on income tax. Because fractions of years are involved, an accurate estimate for the entire retroactive period is not possible. For this period, without a tax rebate, the reduction would amount to \$6,450,000. However, the rebate would reduce this figure substantially.

### Excessive Payments

Brown discussed at length the payments made by PAA to its "national" companies—Compania Mexicana de Aviacion, Compania Nacional Cubana de Aviacion and Panair do Brasil. In the two-year period ended Sept. 30, 1941, he claimed that PAA made excessive payments to these companies of \$1,356,179.

Payments made to Panair "bear little, if any, relation to the value or volume of service rendered to respondent but are intended primarily to insure the profitable operation of Panair," he said, indicating that in general the same statement would apply to Cubana and Cia Mex.

However, he added, these companies are important from the

standpoint of commerce and national defense and, therefore, "the losses incurred in the operation of the national companies (should) be considered in fixing the rate of mail compensation for respondent." These losses amounted to \$781,140 for the two-year period.

Under his estimates for the future, Brown found that PAA's total revenues, other than U. S. mail pay, will be \$14,628,000 yearly, against total operating expenses of \$14,860,500, resulting in mail pay required to break even of \$232,500. However, to this he added the losses of the national companies (an average of \$400,000 yearly), so that the break-even need amounts to \$632,500.

### 6% Return

"The mail pay required . . . to break even . . . being \$632,500, the total compensation of \$2,500,943 as foreseen under the rate here recommended, would yield respondent an operating profit of \$1,373,443," the 111-page report said. "The corresponding return on an investment of \$15,520,000, the amount arrived at herein as required for the operations contemplated, would be 8.85% before federal income tax and 6.01% after federal income tax at the rates now in force. The net profit after federal income taxes would amount to 6.48% of the total anticipated non-mail revenues."

The \$1.02 rate, Brown asserted, "would provide respondent an operating profit which would represent 15.24% of the non-mail revenue, or 11.46% of the investment. Net profit after federal income taxes would represent about 11% of non-mail revenue, or about 8.3% profit."

During part of this retroactive period—the two years ended Sept. 30, 1941—PAA actually received \$12,847,446 mail pay, and after adjustments of recorded revenues and expenses, had an operating profit before taxes of \$7,634,390, or about 58.28c per revenue mile, Brown said. This amounted to average annual operating profit equal to 35% of average investment, or 25% after taxes.

From 1928 to 1939 PAA reported total net income from operations of \$14,840,359. "An exhibit prepared by the analyses division (of CAB) indicates that this should be increased to \$16,207,549," the examiner stated.

"Of the total earnings during the period \$6,797,692 has been paid in dividends to the parent corporation and \$3,415,176 has been applied in the amortization of extension and development expense. The sum of \$1,250,085 has been paid for federal income taxes. Surplus charges and credits result in a net balance of \$1,678,881 in unearned surplus available for dividends as of Dec. 31, 1939.

"It is quite clear from the foregoing that the earnings of the respondent from the Latin American operations during the period referred to have been very favorable."

### TCA Traffic Up

Passenger and mail traffic on Trans-Canada Air Lines in March showed a sharp increase over February, according to W. F. English, assistant vice-president.

### Cunard Recognizes Airline Competition

CUNARD STEAMSHIP Co. Ltd. will be forced to "take to the air" after the war, according to Sir Percy E. Bates, chairman of the board of directors of the 103-year-old British company.

This marks the first time such a statement has been made publicly by an official of a British concern. In the U. S., several steamship companies have been interested for some time in the development of air transportation in connection with their surface travel facilities. Among them are American Export Lines, Matson Navigation Co., Waterman, and W. R. Grace.

In a statement to stockholders, Sir Percy pointed out that wartime operation of long-range bombers will furnish much data for development of oceanic aircraft, and that after the war there will be many skilled pilots available.

"All this may promise competition from the new element," he said. "I think our company will need to enter this element in one way or another, even though, given a fair field, the sea probably can hold its own."

"The situation would be changed if air traffic were subsidized to a great degree, and there will be much pressure in this direction. I think we will have to take to the air or at least maintain direct association with it."

## PAA Reports \$3,361,251 Net; Hired 14,186 Employes in '41

PAN AMERICAN Airways Corp., New York, N. Y., reports that for the year ended Dec. 31, 1941, it had net income of \$3,361,251, compared with 1940 net of \$2,256,317. This is equal to \$1.73 a share on 1,937,335 shares of capital stock outstanding.

Flight and ground equipment acquired during 1941, for which PAA paid \$9,650,000, included three new Boeing 314s; 18 DC-3s and 13 Lockheed Lodestars. Reporting delays in schedule expansions awaiting deliveries of new equipment, the company states that it has contracts for future delivery of 40 Lockheed four-engine transports, 16 DC-3As and 3 DC-4s, plus letter-agreements with manufacturers for 19 additional DC-4s and 27 DC-3As.

Stressing wartime activities of the PAA system, the report discloses that 38 employes were captured with the fall of Pacific bases, and that losses estimated at \$910,849 were inflicted on flight and ground equipment. The company has filed a claim with the War Damage Corp. for these losses. Under contract providing for continued operation by the company, title to the Atlantic and Pacific Clipper fleets was transferred to the government at the outbreak of war.

Personnel employed by Pan American and its subsidiaries totalled 21,663 at the end of 1941. The annual report states that 14,186 persons were hired during the year, mostly for emergency projects.

Ton miles flown increased from 75,000,000 in 1940 to 110,000,000 last year. The system carried 375,732 passengers against 285,095 the previous year, with passenger miles flown totalling 227,-

000,000. Air express was up from 5,500,000 to 11,800,000 pounds.

Consolidated profit and loss statement shows operating revenues \$36,957,086 as follows: air mail, U. S. and foreign \$18,211,059, passenger \$15,339,406, express and other transportation \$1,681,662, non-transportation \$1,724,356. Non-operating revenues of \$186,413 include dividends of \$102,374, miscellaneous credit \$59,500. Operating expenses of \$31,318,304 were maintenance and repairs \$5,878,738, depreciation \$4,505,712, amortization \$928,119, rents \$48,780, other (including salaries, wages, fuel, insurance) \$19,585,952. Consolidated net income was \$3,361,251, including \$491,874 net income of foreign subsidiaries. Provision for taxes include \$2,380,125 for U. S. and \$180,000 foreign.

### Balance Sheet

Consolidated balance sheet on Dec. 31, 1941 included: Assets \$80,066,797; current \$13,915,046 (cash \$3,938,776; accounts receivable \$6,634,762, including \$5,641,139 from U. S. and other governments; gasoline and oil \$1,425,640). Other assets include inventories \$3,142,187; funds for equipment replacement \$6,655,000; cash in escrow under equipment purchase contract \$900,000; investments in stocks of associated companies \$883,680; airports, buildings and equipment \$26,923,330 (flight and ground equipment \$19,260,214, buildings and airport improvements \$5,884,163); prepaid and deferred charges \$2,668,398; balances relating directly to emergency government contracts total \$20,883,331 with cash of \$5,110,343, amounts to be reimbursed by U. S. government \$5,165,941, construction of special facilities in suspense \$10,111,989. Liabilities: Current \$10,017,674. Other: Capital stock, PAA Corp., 1,937,355 \$5-per-share outstanding (of an authorized 3,000,000) \$9,686,775; consolidated capital surplus \$14,707,604; consolidated earned surplus \$4,895,733.



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## 13 Years With the Wrong Airline

GOVERNMENT agencies have long maintained obsolete mailing lists, but an all-time high was reached last month when the Post Office at Los Angeles endeavored to deliver a parcel of documents from CAA to Maddux Air Lines. This airline has been out of existence so long (since 1929 when it merged with Trans-continental Air Transport) that newer employees of various airlines which the PO consulted had never even heard of it. The address was imprinted by an addressograph plate which the CAA had inherited from the old Bureau of Air Commerce and evidently had remained in the file since 1929.

## What Others Say

H. J. SYMINGTON, president, Trans-Canada Air Lines (in his Annual Report)—"Work on direct war contracts for the overhaul of military aircraft, engines, instruments and accessories (including aircraft used by the Atlantic Return Ferry Service operated by the British Overseas Airways Corp.) will expand considerably and place additional burdens on the supervisory and skilled personnel of the company."

EMBASSY OF THE U.S.S.R., Information Bulletin—"What can be said about Hitler's present flying personnel? Flying schools still remain the basic centers of personnel training in Germany. During the war their number was increased to 74. The instruction course for fighter pilots has been shortened during the war to three to six months, for bomber crews three to five months. Each school has facilities for training 150 men. The majority of flyers now in service graduated from flying schools in 1941 or 1942. They have the rank of lance corporal, their average age is 18-21 and their fighting experience three to seven months."

MAJ. ALEXANDER P. de SEVERSKY—"What the Axis fears most, in relation to the U.S., is our launching of a vigorous program of construction on long-range aircraft, planned to strike the enemy at his heart in his own citadel of power."

SOUTHERN FLIGHT—"We have not yet been able to reconcile all the howls and yelps from the private flying family over the new designated airport regulations with the private flying family's one-quarter-hearted support of the Civil Air Patrol. Maybe some day we will learn that in unity there is strength. And that Uncle Sam, long the patron saint of private flying, for the first time in history asks us to make a small, voluntary payment on account of interest. One-fourth has come through since Pearl Harbor. The other three-fourths do most of the yelling when a new restriction comes out. Effen that ain't human nature!"

J. CARLTON WARD Jr., president, Fairchild Engine & Airplane Corp. (in his Annual Report)—"Arrangements have been perfected whereby developments in the field of high altitude engine performance will be available to any interested engine manufacturer upon release by our government, as soon as the development work is satisfactorily concluded and successfully meets its objective. A similar approach has been made to the work being done on more efficient engine cooling."

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## Airlines 'Black Out' Over Airports, Defense Areas

U. S. AIRLINES are now drawing "black out" curtains over plane windows to prevent passengers from observing military activities at airports and in certain other areas.

It is felt that this practice, initiated by the Air Transport Association at the suggestion of the Army, may forestall any move to require the airlines to paint the windows in passenger cabins. This has been favored by some government officials.

Stewardesses now draw the curtains three minutes before landing. They remain drawn while the plane is on the ground and for the first three minutes after take-off.

"Black outs" also occur over harbors, convoys, and vital defense plants or areas. Much is left to the discretion of the pilot. If a flight over a defense plant does not permit a view of activity at that place, if visibility is low, or if the plant is

unlighted at night, it is not necessary for him to order the curtain drawn.

Answering criticism that this action is not necessary at all U. S. airports, an official pointed out the fact that there was no military activity at a certain airport would be of value to the enemy. The Adjutant General of the Air Force specifically requested that the order apply to all airports.

Stewardesses have instruction to report to the ATA the names and addresses of passengers who withdraw the curtains without permission. An occasional momentary peek to see if the plane is landing, etc. is countenanced, although the passenger is warned.

If a passenger persists in leaving the curtains alone, the airlines are advised that they within their rights in removing the passenger at the first intermediate stop.



Drawn Curtains: As in the U. S., Trans-Canada Air Lines blacks out its plane windows over military areas. TCA Stewardess M. Nobles installs the curtains used by the company while an RCAF pilot watches.

## Railroad Files Application With CAB for Air Routes

INDICATION that the railroads are interested in establishment of air routes, with particular emphasis on cargo, was seen Apr. 30 when Rebel Air Freight Inc., wholly-owned subsidiary of Gulf, Mobile & Ohio Railroad, filed application with CAB for mail - passenger - property - goods routes between (1) East St. Louis and Memphis, (2) Memphis and Meridian, and (3) Jackson and New Orleans.

At the same time, the company indicated it will seek permission to operate an air cargo service between Chicago and New Orleans via East St. Louis, Memphis, Birmingham, Montgomery, and Mobile.

All stock of RAF has been subscribed and paid for by the railroad, "which is able to finance any

project it may undertake," the application added. Service would be coordinated with that of the railroad and with Gulf Transport Co., a wholly-owned bus and truck service operating over 2,000 route-miles.

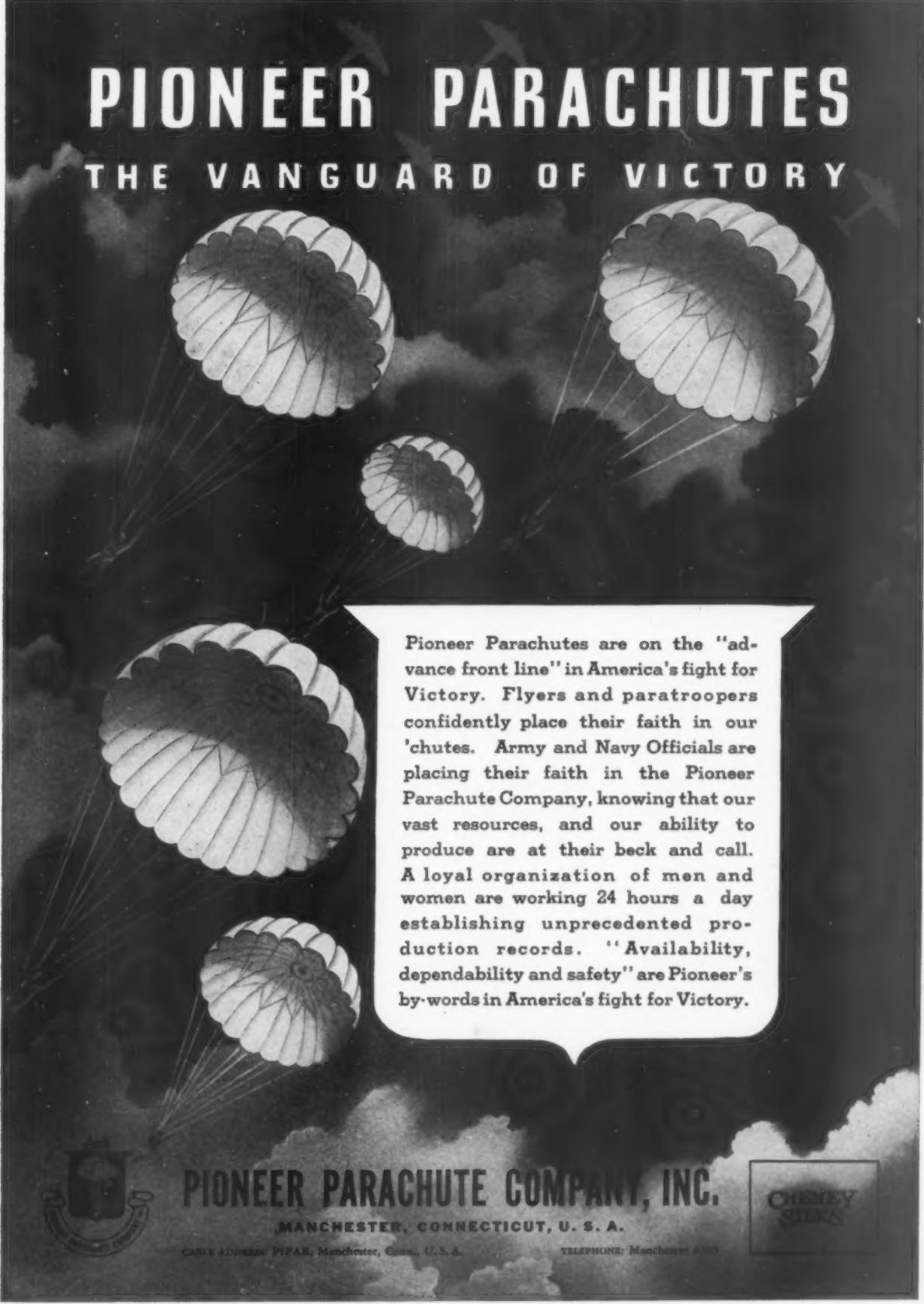
One round trip daily except Sundays is contemplated at first. The application did not reveal the type of equipment to be used.

### Kahle Honored

Keith Kahle, executive officer of the Oklahoma Civil Air Patrol, has been awarded the Jerry Sase Trophy "for outstanding work benefiting Oklahoma's aviation." The trophy is presented each year by Sase, who is president of Oklahoma Air College Inc., Oklahoma City.

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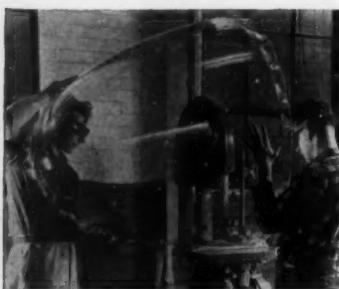
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## Committee Probes Accessory Mfrs.

THE SENATE Patents Committee, conducting hearings for the purpose of framing new patent legislation which will correct abuses existent under present patent laws, has touched twice on the aviation accessory field.

Rohm & Haas Co. Inc. of Philadelphia, manufacturer of Plexiglas, was charged by the Anti-Trust Division of the Dept. of Justice with cross-licensing agreements which curtailed American production of the material essential to military aircraft and with furnishing its German branch with vital information.

The defense claimed, however, that Plexiglas was developed in Germany by Dr. Rohm and that if it



Plexiglas Bomber Nose  
Derived from Germany?

were not for scientific information transmitted from Germany there "would not be an inch of Plexiglas in an American bomber today." Rohm and Haas officials denied that they were placing any production restrictions on Du Pont—only other manufacturer of Plexiglas.

Thurman Arnold, assistant attorney general, presented a case before the committee which pictured the Dzus Fastener Co. as holding up U. S. aircraft production by creating shortage in a single screw through patent control.

The defense brought out evidence to show that it was not patent control which had created a shortage of aircraft fasteners, causing delays in several major production lines, but rather a shortage of materials, and a lack of foresight on the part of government agencies in planning for the expansion of accessory facilities in proportion to the expansion of major aircraft assembly plants.

## Pilot Hours Increased

The President has signed the Lea bill, which will increase the permissible monthly flying hours of airline pilots from 85 to 100.

David L. Behncke, president of the Air Line Pilots' Association, in testimony before the Senate Commerce Committee, said: "If all the additional flying hours of experienced pilots that this bill affords are utilized for military needs, it will mean 30,000 additional flying hours monthly and 360,000 flying hours yearly, which without getting into involved arguments, is a lot of flying hours of highly experienced pilots and something that is of inestimable worth to national defense, especially at this stage of the war."

# House Investigating Committee Hears Testimony of Manufacturing Officials

## Bendix Lowers Costs \$73,354,000; Fleet Queried

VINCENT BENDIX, Ernest Breech, Charles Marcus, and Maj. Reuben H. Fleet appeared on Apr. 30 before the House Naval Affairs Committee, which is investigating the profits of aviation and other Naval contractors.

It developed at the hearings that Bendix Aviation Corp., of which Breech is president, Marcus vice-president and Bendix consultant, is renegotiating contracts to decrease total price by \$73,354,000. Breech asserted that these reductions by the firm were voluntary.

While questioning Maj. Fleet, former president of Consolidated Aircraft Corp., and now a consultant for the company, the committee paid more attention to his personal earnings than to company activities.

Maj. Fleet said that the manufacturer has not renegotiated any contracts and has not been asked to do so.

Rep. Carl Vinson (D., Ga.), committee chairman, praised Consolidated, stating that it "has contributed as much to the advancement of aviation as any other company in America, and Fleet and his company have done a great service to the country." Edmund M. Toland, the committee's chief counsel, said his investigators found Consolidated's records in excellent shape, and its staff very cooperative.

## Reduction Voluntary

Breech told the committee that Bendix has written letters informing government procurement officers of the firm's new lowered price schedule. In answer to a remark by Vinson that renegotiation began two days after committee subpoenas were served, Breech asserted that the reductions were voluntary, that because of increased production unit cost had dropped, and that the reductions had not been made sooner because the company was primarily concerned with output.

Vincent Bendix told Toland that inasmuch as he had resigned as president of Bendix shortly after receiving requests for data on foreign cross-licensing, that this data was not available to him. At the hearing he gave his salary earnings for the past five years as: 1938, \$50,456; 1939, \$50,249; 1940, \$89,032; 1941, \$95,500, and 1942, to date, \$15,-

300. At present he receives \$4,000 a month for his services as consultant.

Regarding Bendix cross-licensing agreements with German and German-controlled firms in occupied France, a legal adviser for Bendix volunteered a statement at the close of the hearing which revealed that the anti-trust division of the Department of Justice, after studying 30,000 pages of Bendix records, had only five minor recommendations to make, to which the firm agreed.

Bendix did object, however, to a consent decree which would have required it "to license all applicants under all of their patents for time immemorial."

The legal adviser emphasized that the grand jury hearing the case has been dismissed and no indictment rendered.

Marcus explained to the committee licensing agreements with foreign manufacturers, covering starters for aircraft, automobile and diesel engines, aircraft de-icing equipment, and equipment used in connection with superchargers and fuel injection pumps.

## Passed by Military

Concerning technical information which Toland claimed Bendix furnished a German company, Marcus was quick to point out that "that always passed with permission of our military people in this country."

He explained also that Bendix had three subsidiaries in the vicinity of Paris: S. A. Air Equipment Co.; S. A. Bendix (auto brakes), and Duxillier, S. A. Bendix maintained a Paris representative to guard its interests after the fall of France, he said, making it clear that at no time did the company give its consent to any arrangement under which its Paris subsidiaries could supply Germany.

"We knew that the Germans had moved into France," Marcus told the committee. "Our country at that time was under a neutrality proclamation. At any time a stockholder might inveigle against us for not properly taking care of the property of the company, and for us it was a very trying question. It may appear at this date that that was for the purpose of helping the Germans in the light of what has happened since, but that is hindsight, so far as we are concerned. In 1940 it was our duty as officers to guard that interest."

Maj. Fleet testified that during the past five years he received dividends from Consolidated ranging from \$8,750 in 1936 to \$681,119 in 1941. From 1925 to 1928 his dividends totaled \$592,750, but during the depression years from 1929 through 1935 he received nothing. His salary was \$10,000 for 1924-26; fluctuated between \$15,000 and \$20,000 from 1928 through 1939; rose to \$36,000 in 1940, and to \$62,500 in 1941. At present he is retained by the company at a salary of \$60,000, but owns no stock.

Maj. Fleet's initial investment in Consolidated in 1923 was \$15,000. Last fall he sold his stock for \$8,647,097.

Consolidated's profits for the first 11 months of 1941 averaged only 8.5%, Maj. Fleet pointed out.

"In the 11 months, we delivered to the Navy \$21,000,000 and made \$450,000, only 2.2%," he explained. "We delivered \$3,000,000 to the Army and made \$215,000, which is 6.8%. We delivered to foreign countries (Consolidated has at no time made any deliveries to Italy, Germany or Japan) \$72,000,000 and made \$7,500,000, which is 10.4% profit."

## Vinson Investigating Group Gets \$40,000

THE NAVAL Affairs Investigating Committee headed by Rep. Vinson, has been granted an additional \$40,000 to continue its work. The Committee has been especially praised for the government savings it has effected through contract renegotiations, amounting to hundreds of millions of dollars.

Chief Counsel Toland claimed credit for the committee last week for savings of approximately \$300,000,000. Of this sum, \$41,343,277 was in direct refund to the Navy Dept. In addition, a direct refund, volunteered by Sperry Corp., of \$100,000,000 has been announced.

Toland asserted that his investigators had been at work on Sperry books since February and that the committee had yet to decide whether the figure set was "just and fair to the government." Of the \$41,000,000 figure, over \$22,500,000 represented aviation contracts.

Indirect and intangible savings for the government are estimated at \$150,000,000.

## Profit Bills Tabled

HEATED DEBATE by House Naval Affairs Committee members over the Smith-Vinson bill and two substitute bills concluded on Apr. 30 with a 13-12 vote to table all three profit-limitation-labor measures. Probable significance of the tabling is that the 77th Congress will leave government recapture of excessive profits to taxation. The tabling was opposed by Chairman Vinson (D., Ga.) and Rep. Maas (R., Minn.), ranking Republican committeeman.

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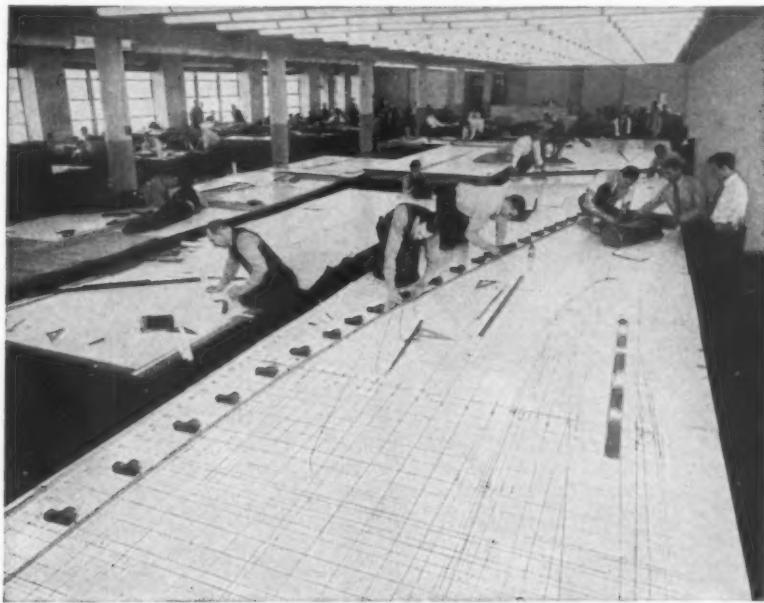
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## Fortnightly Review

(Continued from page 1)

and cooperation of the local Civil Air Patrol offices. Next they requested radio stations and newspapers to assist in a survey to determine how many private pilots between the ages of 27 and 35 would be willing to take a "refresher" course preliminary to a non-combatant flying job. Everything was to be on a volunteer basis.

In two days of radio and newspaper announcements, nearly 1,200 pilots in the southwest had volunteered. In any man's language, that's showing results.

The survey proved that there are thousands of men and women holding pilot licenses who want something to do in the war effort. They aren't combat pilots by any means—but they know airplanes. The survey also proved that the huge reservoir of civil aviation hasn't yet been mobilized for the war effort despite the editorializing and crusading by civil aviation. And the military chiefs were so pleased by the results that the Army immediately gave the plan a warm reception. To top off the experiment, the CAA in Washington saw the light and jumped into action.

The men who put an idea to work? They are Ed C. "Pop" Nilson, Civilian Pilot Training superintendent for the fourth CPT region at Ft. Worth, a man well known in aviation for many years who put Orlando, Fla., on the map as a pre-war sportsman pilot's paradise; and George Haddaway, the irascible, techy, and crusading editor of *Southern Flight*, whose large Texas heart has always bled for the underdog and the forgotten private pilot.

Today when you hear a spot radio announcement asking for pilot volunteers, you can give credit to Messrs. Nilson and Haddaway, who are made of the aggressive stuff on which America was built. A pool of pilots for ferrying, for target-towing, for courier service, for instructing, and for a host of other purposes, is in the making. Another segment of civil aviation is now being lined up for the war effort. Hats off to Texas for an idea that made good.

## The Censorship Boomerang

WHATEVER may be his other accomplishments, the president of the Air Transport Association, Edgar Staley Gorrell, has never been noted for a sound conception of public relations. The tactlessness and the negative approach of ATA to public relations has been, unfortunately, the weakest feature of the association for some years. As long as the airlines maintained alert and aggressive publicity organizations themselves, the lack of an industry spokesman (a man to whom newspapermen and other writers could go for accurate and truthful statements and guidance) has not been so important.

The Colonel's efforts to throttle the industry with an extremely rigid censorship code, far more rigid than anything proposed by the government itself in the midst of war, has been a rather unhappy episode and one which lets other similar organizations such as the American Association of Railroads know how young the air transport industry is today. The airlines have spent a vast amount of money building up goodwill through advertising and excellent press relations. The quickest way to destroy this goodwill and confidence is to impose a censorship code.

It is quite true that the airlines must walk the tight-rope for the duration. But by forcing through a censorship code of such ridiculous proportions as he accomplished by a few fast manipulations, the Colonel is, in effect, telling the airline publicity men that they are dumb clucks incapable of knowing right from wrong. What he should have done was to explain in simple words what the airlines should and should not do, establish a clearing house in Washington for purposes of expediting approval of copy from the War and Navy Departments, and let it go at that. The Beverly Griffiths, the Bob Johnsons, the Joe Ferrises, the Theon Wrights, the Harry Stringers, and the Frank Bruntons, to name only a few, are perfectly capable of keeping the airlines straight for the duration. They know publicity. Col. Gorrell never has. If he did know public relations, he would have known that the only possible result of a censorship code is an unfavorable boomerang. (See story on page 19).

## Selling the Air Ocean

OUR EYES BULGED the other day as we read the latest in the long famous series of thought-provoking full-page advertisements by American Airlines. Always the messages have been exhilarating. Always they have been masterpieces of brilliant writing. But this latest ad on the subject of the war hits a new high. As a sample, read the following excerpt:

"This war is everywhere because air is everywhere. You need only to look skyward and you can see above you a potential, and not impossible, battlefield. The warplanes travel in the limitless, boundaryless and universal ocean of the air . . . the only ocean that surrounds and covers every point of the earth's surface . . . Hawaii and Havana, Singapore and San Diego, Tripoli and Tokio, Berlin and Boston! Therefore, the better to understand where this war is, it is necessary to grasp the omnipresence of air; to realize that wherever there is air there can be battleplanes. Now, not one inch of this globe is isolated. This war has no barriers, because airplanes can cross mountains, seas, deserts, arctic ice floes and equatorial jungles with equal freedom and speed."

It would be impossible, obviously, to measure the good this advertisement accomplishes, but it is the type of copy the aviation industry has long needed to place before the public. It is fundamental. It gets down to the basic conception of airspace. It prepares the mind for the vastness of the air ocean and for the immense era of international—global, in fact—air commerce to come when transport planes replace bombers.

"This war is everywhere because air is everywhere." The industry has built the vehicles to operate in this air ocean, but the job of instilling a basic understanding of the air hasn't been as far-reaching as it should have been. American Airlines is to be commended for doing a job that benefits every phase of the aviation industry.

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## Milestone Without Airports

ON MAY 12 All American Aviation Inc., headed by alert and hard-working Dick du Pont, celebrated its third anniversary. During three years of pick-up mail and express service over some of the nation's most difficult and mountainous terrain, All American has established an exceptional record of providing speedy mail service to scores of isolated communities having no airports or landing fields. Considering the flying conditions which prevail in western Pennsylvania and in West Virginia, the record of 94% completed schedules is gratifying.

Using single-engined airplanes on daily schedule, All American has flown 1,712,105 revenue miles in three years and transported 375,762 pounds of mail. The planes made 92,934 "stops," a demonstration itself of actual service rendered to an important region of the country. Rep. Jennings Randolph of West Virginia, legislative father of the air pick-up service, can well feel proud that his experimental project is no longer an experiment but a proven asset. The future of the air pick-up in this country, in South and Central America, in northern Canada, China, and other parts of the world, should indeed be bright with three years of practical demonstration in one of the world's toughest proving grounds. (See story on page 16).

## Letters

### Design Evolution

Philadelphia, Pa.

Applying practical judgment to the important factor of the basic design of the airplane, the all-wing, or lifting fuselage type of design, as invented and reduced to practice by V. J. Burnelli, definitely indicates a necessary change in the design evolution of the airplane and proves to be the most practical means for both military and commercial aerodynamic, structural, and safety advancement.

The only really new element introduced by the airplane relates to



One Frontal Area

**Feature of the Burnelli Type**  
its external form and consists of the blending of a series of contours which effect its motion through the air with the minimum of resistance and maximum of lift. It is this change from the basic concept of the established streamlined system of design which makes the Burnelli

type of far-reaching effect and importance.

With the Burnelli type, the fuselage and engine housings are combined into one frontal area which is of enlarged airfoil contour, thereby applying high lift to the fuselage section and reducing the complementary wing area required—with contributing structural advantages and weight saving by reduction of the over-hung wing support or bending moments.

ALAN P. LYSTER

### A Compliment

Rockford, Ill.

I have been a charter subscriber to AMERICAN AVIATION and I would like to compliment you and your staff on your splendid editorial policy "the independent voice of American aeronautics." I sincerely believe that your program has done more than any other single factor in giving aviation its rightful place in the American way of life.

FRANCIS H. SPICKERMAN,  
Aviation Committee  
Chamber of Commerce

### 'Truthful Answer'

Winston-Salem, N. C.

Our hat is off to you! The reproduction of the "Three People Sleeping" cartoon on the cover of your Apr. 15 issue is truly a patriotic and truthful answer to Pullman's pointed advertisements.

Since I first saw one of Pullman's ads of "Two People Sleeping" I have been disturbed by the fact that so many people will read and believe what that ad tries to imply.

Why, oh why, should a progressive organization like Pullman try to tear down all the confidence of the American people that the industry has had such a struggle to build up? Especially now, when every American knows that without the unsurpassed airlines of our country, those three people could sleep peacefully night after night, and without these airlines, later on many Americans would need-

### SAE Thwarted

Inability of railroads to guarantee sufficient Pullman accommodations, and continued presence of diplomats of enemy countries at White Sulphur Springs, W. Va., have led the Society of Automotive Engineers to rule out holding its annual summer meeting at the West Virginia resort as planned.

This year's annual summer meeting will be taken to the SAE's membership by local meetings and a special "summer meeting issue" of the *SAE Journal*.



"How about someone checking the plane?"

lessly sleep forevermore.

Again, may we congratulate you on your efforts to keep America awake. We would like to see a full-page reproduction of this cartoon in every leading magazine.

T. H. DAVIS,  
Vice-President,  
Piedmont Aviation Inc.

### Brig. Gen. H. H. George

Brig. Gen. Harold H. George, air officer on the staff of Gen. Douglas MacArthur, was killed in a recent airplane accident, it was reported to the War Dept. by Gen. MacArthur. The news was released in Washington by the War Dept. on Apr. 30.

A posthumous award of the Distinguished Service Medal was made by the department. Gen. George served as Chief of Staff, Far Eastern Air Force, as Commanding Officer, 5th Interceptor Command, and from Dec. 21, 1941, to March 11, 1942, commanded all Air Corps troops in the Philippine Islands.

### Max J. Pollet

Max J. Pollet, 38, regional vice president of American Airlines, died of a heart attack on Apr. 24 in New York City.

Pollet entered aviation with Colonial Western Airways in Cleveland. In 1930 he joined American as district sales manager in Albany, transferring to Buffalo in 1937. In 1941 he became assistant to Vice President O. M. Mosier and in December of the same year was named regional vice president.

He assisted in the formation of the New York State Aviation Association, and in 1936 was named its first president.

### Walter J. Rich

Walter J. Rich, 62, a director of Curtiss-Wright Corp. since 1929 and of Wright Aeronautical Corp. since 1928, died Apr. 21 at his home in New York City.

Before joining Curtiss-Wright, Rich was president of Vitaphone Corp., which was later acquired by Warner Brothers Pictures Inc.

### Roy Carl Hicks

Roy Carl Hicks, 58, treasurer of American Propeller Corp., Toledo, O., until his recent illness, died on April 27 in Detroit. He had been identified with the automotive industry for more than a quarter of a century.

### Adm. A.L. Bristol

Vice Adm. Arthur LeRoy Bristol, 55, commander of a task force in the North Atlantic and commander of the Naval Air Station at San Diego from 1936 to 1939, died on Apr. 20, the Navy Dept. has revealed. Death was from natural causes, the announcement stated, although it was not said whether he died at sea or ashore.

Adm. Bristol qualified as a naval aviator in 1928, when he was appointed commander of aircraft squadrons, Asiatic fleet. He was placed in command of the aircraft carrier *Ranger* when it was commissioned in 1934.

### Calendar

(Events listed below are subject to cancellation without notice)

MAY 19-20—National Metal Trade Association, Annual Convention, New York, N. Y.

JUNE 8-10—American Society of Mechanical Engineers, Semi-Annual Meeting, Cleveland, O.

JUNE 19-20—8th Northwest Aviation Planning Council, Spokane, Wash.

JUNE 22-26—American Society for Testing Materials, 45th Annual Meeting, Chalfonte-Haddon Hall, Atlantic City, N. J.

# CAA to Train Traffic Control Personnel Pre

## Must Replace Employees Facing Military Service

By LEONARD EISERER

THE CIVIL Aeronautics Administration this coming July will begin a nationwide training program for air traffic personnel, the first of its nature for men and women to be charged with responsibility of controlling and directing all air traffic along and across the country's 35,000 miles of federal airways.

Men and women between 21 and 50 years old, many of whom have never been in an airplane before, will be trained during the four to six months course to understand piloting problems, scores of Civil Air Regulations, and the various techniques employed in maintaining an orderly, well-regulated flow of air traffic.

While immediate need for the program is a wartime product, civil aviation will inherit many of the benefits when large numbers of experienced traffic controllers will be in demand to cope with the intricate traffic problems of the peacetime air age to come.

The training of traffic personnel on a national scale at this time is considered necessary by the CAA to replace the large percentage of present personnel liable for military service, and also to furnish the additional persons required to handle the tremendous air traffic increase flowing from the war effort.

Testifying before a House appropriations subcommittee recently, Glen A. Gilbert, chief of the CAA's air traffic control division, indicated that eventual loss of 900 of his division's 1,300 present employees is anticipated. This would mean an approximate turnover of 70% in air traffic personnel in the war months ahead.

### New Requirements

The broad replacement program involves a definite revision in experience requirements for applicants. No longer, as in the past, will the CAA require its air traffic personnel to have at least a private pilot's rating or previous experience with an operating airline.

The bottom of the barrel of these specialized personnel has been scraped by other wartime developments, and the CAA must now turn to persons not likely to be called for military duty to operate its air traffic services: men over 45 years of age, but under 50; men unqualified for active military service, but still able to satisfy CAA physical requirements; men with sufficient dependents to preserve them from military call for a reasonable period of time; and last—but inevitably—women.

"Under the replacement program,



Emergency Control Tower

### Army Built for CAA Operation

we contemplate requiring a certain broad educational and experience background which will prove that he or she is the type of person who can assimilate knowledge and be trained," Gilbert told the House group.

Speaking broadly, that will mean a four years' college education, or substituted experience in certain lines of work. With that type of person, we think under this training program they will get a view of what is required of a flyer, know something of his problems, though they may never have been in an airplane.

"We have to teach them what navigation is all about; what the problems are in bringing a plane down. We will teach them what flying with radio equipment means; how you fly by instruments. We have to teach them regulations."

All of the personnel will be hired through the Civil Service Commission. Trainees will be paid at the rate of \$1,800 a year while in training.

### Teaching Teachers

A special course to provide competent teachers for the air traffic controller program was started in Chicago early this month. Taking that special instructor's course, which will continue through this month, are two air traffic controllers selected from each of the CAA's seven U. S. regions. These 14 air traffic control experts now learning teaching techniques from educators supplied by the U. S. Office of Education will later form the staff for the regular training program to follow.

The new air traffic controller training project is due to begin on July 1, at the headquarter cities for each of the CAA's continental regions—New York, Atlanta, Chicago, Ft. Worth, Kansas City, Santa Monica, and Seattle. There will be about 30 CAA airport and airway traffic controller trainees in each class, and, in addition, about 10 Army-Navy traffic trainees.

The course will last from four to six months depending upon the speed with which the trainees can assimilate adequately the subject matter.

It is currently hoped that three such courses may be completed during the next fiscal year, yielding some 600 trained persons for the CAA's airport and airways traffic control services.

Hope is also held by CAA officials that, once the training program has proved its worth, it may become a continuous process, turning out skilled airport and airway traffic controllers to direct the heavy civil air movements of the post-war era.

The air traffic increase experienced on federal airways in the past year has been tremendous despite the severe restrictions placed on non-airline civil flying by wartime regulations.

### Traffic Up 700%

According to CAA air traffic control chief Gilbert: "Today our traffic control service is controlling over 700% more traffic than it was a year ago. Many of our airway control centers today are handling in two weeks as much traffic as they handled during an entire year three years ago. At the rate that the traffic is increasing as a result of the war effort and the greatly expanded military operations, we anticipate increases in traffic from 1,000-2,000% within the next few years. This includes all aircraft, Army, Navy, private and air carrier."

Of the 111,598 aircraft operations handled by CAA traffic control centers in Feb. 1941, 55.7% involved air carrier planes, 33.5% Army, 5% Navy or Coast Guard, and 5.8% civil itinerant. By February of this year, however, the percentages had shifted so that 64.4% of the 649,783 aircraft operations handled that month were Army planes, only 17.4% airline, 11.4% Navy or Coast Guard, and 6.8% civil itinerant.

When on Mar. 1 the last of 23 airway traffic control centers was commissioned, federal control was extended to cover practically all of the civil airway system's 35,000 miles. Only one or two minor segments of the federal airways remain to be brought into the control areas of the established centers. This will be accomplished as soon as necessary equipment is delivered.

As late as last September, the CAA had only 14 airways traffic control centers regulating traffic on but 56% of the civil airways system.

### Control Tower Plan

Ahead of schedule fulfillment of a program directed last fall by Congress at the request of the War

Dept. is also reported by the CAA air traffic control division—the task of taking over and operating airport traffic control towers at certain designated airports used jointly by military and civil aviation.

Of the 67 airport control towers certified by the Secretary of War for CAA operation in the interest of safety, 42 have already been taken over, 21 are in the process of being commissioned, with the remaining four locations yet to be selected by the War Dept.

The CAA is planning to take over all of the 21, except two in Alaska, by the end of this month.

The 42 airport traffic control towers now operated by the CAA are at the following locations:

Albuquerque, N. M.; Atlanta, Ga.; Augusta, Ga.; Birmingham, Ala.; Boise, Idaho; Boston, Mass.; Buffalo, N. Y.; Charleston, S. C.; Charlotte, N. C.; Columbus, O.; Denver, Colo.; Hartford, Conn.; Indianapolis, Ind.; Jackson, Miss.; Jacksonville, Fla.; Kansas City (Fairfax), Kan.; Kansas City, Mo.; Las Vegas, Nev.; Little Rock, Ark.; Long Beach, Cal.; Los Angeles (Mines Field), Cal.; Louisville, Ky.; Memphis, Tenn.; Miami, Fla.; Nashville, Tenn.; Newark, N. J.; New Orleans, La.; Oakland, Cal.; Orlando, Fla.; Pendleton, Ore.; Portland, Ore.; Providence, R. I.; St. Louis, Mo.; Salt Lake City, Utah; San Diego, Cal.; Savannah, Ga.; Seattle (Boeing Field), Wash.; Spokane, Wash.; Tampa, Fla.; Tallahassee, Fla.; Tulsa, Okla.; and Wichita, Kan.

The 21 towers in process of commissioning are at:

Anchorage, Alaska; Bakersfield, Cal.; Baltimore, Md.; Burlington, Vt.; Cheyenne, Wyo.; Dallas, Tex.; El Paso, Tex.; Everett, Wash.; Fairbanks, Alaska; Ft. Worth, Tex.; Harrisburg, Pa.; Houston, Tex.; Knoxville, Tenn.; Minneapolis, Minn.; Niagara Falls, N. Y.; Oklahoma City, Okla.; Omaha, Neb.; Philadelphia, Pa.; Phoenix, Ariz.; Tucson, Ariz. and West Palm Beach, Fla.

### Complete Control?

While official indication is still lacking, it would not be surprising if the CAA were to take over the operation of all the remaining 35 or 40 airport traffic control towers in the U. S. (not included in the total of 67 already certified) before the year is up. This undoubtedly would meet with the approval of the various municipalities, which would thus be relieved of both the expense and responsibility involved in tower operation.

Operation of all control towers by the CAA would extend federal control over airline planes from ramp to ramp, and provide coordination of airport traffic control with the airway traffic control system, already under CAA jurisdiction. Other advantages would be the possibility of achieving standardization of control procedures, practices and equipment, and the establishment of a uniformly high personnel performance through the national training program previously outlined.

# President Requests Funds for 430 More Airport Projects Under CAA

## F.D.R. Asks \$199,740,000 For Fiscal '43

PRESIDENT Roosevelt late last month asked the Senate for an appropriation of \$199,740,000 for continuation of the Civil Aeronautics Administration's airport development program in the U. S. and Alaska during fiscal year 1943.

The amount represents a more than 25% increase over the \$159,593,050 appropriated for that purpose during the current fiscal period, and slightly exceeds the total—\$199,593,050—thus far appropriated for development of landing areas by the CAA, since beginning of the program in 1940. No estimate for airport development projects was included in the 1943 funds allocated for CAA earlier this year.

The \$199,740,000 sought for construction improvement and repair of

airports in the next fiscal period is intended for development of airports at 164 new locations and improvements and enlargements at 266 existing fields. Additional landing facilities will be provided for the use of the Army Air Forces Ferrying Command within continental U. S., and funds will be released for completion of certain landing areas for military use in the territory of Alaska.

As explained in the President's statement to the Senate, "The proposed work of improvement and development has been specifically recommended by the Secretary of War as being vitally necessary to the efficient operation and training of the Army Air Forces under the War Dept. program."

Since more airports are now generally recognized as a vital part of the country's military air program, Congress is expected to appropriate the funds as requested with little of the bickering which in the past has been injected into hearings by Congressmen irked over the amount previously distributed for fields in their home districts.

As in the past, military strategy alone will govern selection of the locations for the new CAA landing field projects.

With the \$199,593,050 appropriated since beginning of fiscal 1941 for development of landing areas by CAA:

170 new airports have been constructed in continental U. S.; 274 existing landing areas have been improved or enlarged; 13 seaplane bases have been improved; and 33 airports outside continental U. S. have been improved.

In addition, on May 1 money remained for 14 other airport projects as yet unassigned.

### Rules Must be Obeyed For Survival of Civil Flying, CAB Warns

RECENT violations of federal aviation regulations leading to 55 suspensions and revocations of pilot and mechanic certificates in February and March have elicited from the Civil Aeronautics Board warning that "if civil flying is to continue in the U. S., certificate holders must know and abide by the Civil Air Regulations."

It is "extremely unfortunate," CAB remarked, "that this unusually large number of suspensions and revocations is necessary at a time when every pilot and every plane is needed in cooperating with the war effort."

The 55 spankings administered by the CAB during February and March consisted of the revocation of 14 pilot tickets, and the suspen-

sion of 39 pilot and two mechanic licenses.

The violations in all cases were "inexcusable," CAB declared, pointing particularly to one instance when the holder of a commercial pilot certificate with an instructor's rating flew dangerously near a convoy of Army trucks.

### AIRCRAFT PERSONNEL WANTED

1. STRESS ANALYSIS ENGINEERS
2. LAYOUT DRAFTSMEN
3. DETAIL DRAFTSMEN
4. WEIGHT CONTROL ENGINEERS
5. BILL OF MATERIAL CLERKS
6. AIRCRAFT FACTORY SUPERVISORS
7. LARGE JIG AND FIXTURE BUILDERS
8. EXPERIMENTAL WORKERS SKILLED IN TUBULAR AND WOOD STRUCTURES
9. TOOL DESIGNERS

Experienced men urgently needed. Write today, giving complete details as to training, experience, married or single, citizenship, salary expected, etc.

**THE WACO AIRCRAFT COMPANY**  
Troy, Ohio



## WEATHERHEAD HYDRAULIC CYLINDERS

WEATHERHEAD hydraulic actuating cylinders are being supplied in volume to major aircraft companies.

Like all other Weatherhead airplane parts, these cylinders are manufactured to Air Corps, Navy, and "AN" specifications as standard production.

Each airplane part that Weatherhead produces has been engineered not only for performance, but also for mass production to provide the increasing output so essential today. In addition to hydraulic cylinders, these parts include Dural Tube and Pipe Fittings; Vacuum Selector and Check Valves; Hydraulic Check Valves; and High, Medium, and Low Pressure Hydraulic Flexible Hose Assemblies.

### THE WEATHERHEAD CO.

AIRPLANE DIVISION

Main Office: Cleveland, Ohio

East Coast Office: New York, New York

West Coast Office: Los Angeles, California



# WEATHERHEAD

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# Aircraft Industry Will Operate Under New Materials Plan Shortly

## WPB to Get Over-All View of War Needs

THE AIRCRAFT industry is preparing to operate under the new Production Requirements Plan, which the War Production Board has devised as a basic means for the future procurement and distribution of all war materials, starting with the third quarter in July 1.

Representing a fundamental change in the present priorities system, PRP is intended to give the WPB an effective means for harnessing supply and demand by enabling it to determine total material requirements of all war industries in advance and match these requirements with the necessary material supplies.

This will be accomplished by requiring all important manufacturers of war goods to file detailed quarterly reports with the WPB indicating the amount of materials used in the preceding quarter, inventories on hand, and estimating material needs for the coming quarter or six months. With all industries under PRP, the WPB will have before it a preview of requirements for the predictable future, thus facilitating the allocation of available materials where they are most urgently needed.

The plan is to present the armed services with a complete picture of the raw materials on hand and those needed, and let them decide what products they wish first.

As a result of a recent series of industry-government familiarization conferences sponsored by the Aeronautical Chamber of Commerce, the aircraft industry is well informed on basic operations of PRP and will be one of the first groups to utilize the plan.

### Less Fear Buying

Belief has been expressed by Irving H. Taylor, manager of the Aeronautical Chamber's War Production Department, that ready acceptance of PRP will keep the aircraft industry in the vanguard of the war production effort.

It is hoped, he said, that confidence in the plan of filing estimates of future requirements every quarter will "eliminate fear buying and overstocking, at the same time permitting long range planning of materials production based on total needs reported by all war industries."

Actually, PRP reporting of material requirements amounts to adding an insurance clause to any previous priorities or allocations plan, by assuring materials production far enough in advance to

permit adjustments and eliminate potential bottlenecks."

Larger aircraft parts and accessories makers, like the prime aircraft and engine manufacturers, will come under PRP automatically, while smaller firms with annual gross of less than \$250,000 will probably be expected to secure materials through the prime contractors for whom they are working.

A principal advantage of PRP over the present blanket priority rating system is that it will supply WPB with information which may be used to forecast bottlenecks on critical materials before the shortages develop, allowing time for remedial action.

In order that impending shortages discovered through PRP may be alleviated, or even perhaps entirely avoided, the aircraft companies have agreed to forecast their material requirements a year in advance by filing 12-month estimates with WPB every quarter. With shortages anticipated far enough ahead, WPB officials could take steps either to increase production of the critical material or find some other material that may be used as a substitute.

It is not yet certain whether other groups will follow the aircraft industry's suit in this respect, but even the minimum forecast of material needs three months in advance, as required under PRP, is considered an improvement over the present blanket order system.

### Over-All View

The inventory requirement of PRP will provide the WPB with an over-all view of materials on hand, and if excessive stocks of certain items show up, steps may be taken to divert the overstocks to other manufacturers having an immediate, serious need for such materials.

While some aviation procurement experts were at first skeptical over adoption of PRP because of the large amount of paper work involved, discussions between government and industry representatives have largely eliminated opposition to the plan.

Aircraft companies have been assured that when the industry is functioning under PRP, the various reports now required by the several materials and operations branches of the WPB will be eliminated.

Thus when PRP is in full operation, it is quite possible that the various P, M, and L orders will be revoked or allowed to expire, and the whole materials procurement operation taken care of through PRP.

Supporters of PRP point out that the blanket A-1-a priority rating in some cases no longer obtains materials for aircraft manufacturers as promptly as did the A-1-c and A-1-d ratings six or seven months ago, since today every important war product has A-1-a or better.

Further, with Lend-Lease and other foreign demands, allocation orders, and Double A (AA) requirements coming ahead of the crowded A-1-a group, PRP advo-

cates express the view that the priorities system is rapidly becoming meaningless.

WPB officials point out that once all war industries are under PRP, priority ratings could be practically forgotten and all materials distributed on the basis of supply and demand, with careful allocation of the most critical materials according to the military urgency of the end product.

### Airpower

(Continued from page 1)

than it did in the month preceding Pearl Harbor.

"Begin your consideration of the airplane picture by realizing that the airplane production program adopted after Pearl Harbor was presumed by practically everyone to be bigger than could possibly be attained. It was an 'impossible' program if there ever was one. We met our schedules in January and we made 23% more planes than we had made in December. We exceeded our schedules in February which, of course, called for an increase over January. In March again we met the schedule which increases in line with the President's objective."

Those are the words of Donald M. Nelson, WPB chairman.

"The 1941 production of the aircraft industry was \$1,750,000,000—three and one-fifth times as large as that of 1940, the first war production year, during which production rose to \$544,000,000 from \$225,000,000 in 1939.

"Despite the immensity of the continuing plant expansion and

### On the Nose

AMERICAN AVIATION's editors found it difficult to suppress a desire to point out another of their predictions come true.

Based on early 1941 figures, a story in the Nov. 15, 1941, issue predicted that dollar volume deliveries of U. S. aircraft during the year would total "around \$1,750,000,000."

On May 1 the Aeronautical Chamber of Commerce revealed the official dollar volume figure for 1941.

The figure—\$1,750,000,000.

labor training jobs, our aircraft companies are keeping up to or ahead of the schedules laid down by the government and are confident they will triple production again this year."

Those are the words of Col. John H. Jouett, president of the Aeronautical Chamber of Commerce.

In those four months following Pearl Harbor production of heavy, four-engine bombers increased almost 200%.

Production of aircraft engines has kept pace, Col. Jouett reports, registering a 48% increase in number during the same period. In horsepower the increase was 68%.

While continuing production on proved models, the U. S. is speeding up production of new types. "New types in production, and even newer types under development, are more deadly powerful than anything known today," Col. Jouett asserts. "We have more than 20 new types of combat planes in process of development today."

Output of the automotive concerns, which was getting under way toward the end of the November-March span, was scheduled to make substantial contributions to the total production later this year.

## Production Figures Become Ammunition for Politicians

A SUDDEN rash of public statements by Congressmen concerning aircraft production figures, supposedly restricted information, has had the industry guessing.

Closely guarded data held in secrecy by aircraft executives and writers seem to have become political ammunition used to appease an aroused constituency. Sam Rayburn (D., Tex.) came right out at a recent Texas Unity rally and quoted plane production at 3,300 a month.

Industry observers have questioned the flare of optimism concerning aircraft production. Can it be possible, one observer asked, that record-breaking airplane production offers a convenient offset to news of lagging production in other fields, or even to defeats on the war front?

It was believed that the fact that Speaker Rayburn, by his position close to the administration, emphasized aircraft specifically and only

generalized on other fields in the war effort, would lend substance to that viewpoint.

On the day following Rayburn's statement, Sen. Prentiss M. Brown (D., Mich.) told a Michigan gathering that the U. S. "now, not on order, not in six months, but now is producing more airplanes than Germany, Italy, Japan, and all the conquered countries together."

Reports from other parts of the country disclose that Congressmen have leaped upon the theme with delight.

In the words of one aircraft representative who had pleaded before Congressional committees for assistance in getting the industry favored to the extent of providing essential parts:

"The back of my hand to them—what the industry has done has been accomplished in spite of our legislative representatives at Washington, and I for one believe the public realizes that fact."

# Wage Control by NWLB—Myth or Promise?

## Industry Faces Increases; Labor Hits Freezing

By CONRAD CAMPBELL

**S**LIGHTLY bewildered industry personnel executives who read the President's message to Congress advocating wage stabilization for the duration, followed by his somewhat contradictory adjuration to wage earners the next evening, wondered if a wage control plan were really in the offing, or whether the whole thing might be simply a maneuver to circumvent labor legislation.

The President told Congress he did not propose a "ceiling" on wages as he did on prices, but instead called for a stabilization or adjustment to be accomplished by settlement before the War Labor Board. "The existing machinery for labor disputes," he said, "will of course continue to give due consideration to inequalities and the elimination of sub-standards of living."

In his radio address to the nation the next evening, he said bluntly, "Do you work for wages? You will have to forego higher wages for your particular job for the duration of the war." Certainly, there was nothing equivocal about that direct statement.

### Flexible Policy

But the following day, NWLB chairman Davis claimed he had what amounted to a "directive" from the President to pursue a "flexible" rather than an "arbitrary" policy in balancing the wage structure. Rises in wage rates would be made where wages were sub-standard. Asked to define a standard wage, he interpreted it as a wage rate reached through collective bargaining.

What does all that mean to workers in the aircraft industry and to the men who must pay their wages?

One indication is given by UAW-CIO. George F. Addes, secretary-treasurer, said: "Labor has publicly warned Congress that the freezing of wages will be a cancellation of its no-strike pledge. Wage freezing destroys collective bargaining and the destruction of the principle of collective bargaining is the ultimate elimination of the trade union movement." In other words, wage freezing means strikes.

No aircraft official expects or wants a rigid wage ceiling. Nevertheless, "flexibility" has about it a connotation that indicates an almost certain continuance of haggling over wage demands. Set forth as a means of wage maintenance or stabilization it would seem to have quite an opposite effect. In the hands of NWLB, which has piled up a record of allowing a wage increase in every case, but one, which has come before it in which an increase was demanded, authority to

interpret and exert "flexibility" may prove downright disastrous.

How for instance will such a directive affect the Board's decision in the \$1-a-day wage raising demands in the General Motors and Little Steel cases, in which hundreds of thousands of workers are involved and which may correctly be considered precedents for demands in the aircraft field?

CIO President Murray has instructed his officers to continue their efforts before NWLB to enforce this wage increase even though it be contrary to the spirit, if not the words, of the President's message to labor. (Washington reports indicate that the President did not ask the advice of labor leaders before making his talk.)

Murray declined to admit that his position was in conflict with the President's insistence that workers would have to forego higher wages. "I hasten to say that the President and I are not at odds," he said. "I am one of those persons who might even disagree with a President of the U. S., but the fact that I have disagreed about policy does not mean that such disagreement has brought about a parting of the ways."

In any event the demand for a straight \$1 a day increase is going to be pushed, regardless.

Are wage rates in the aircraft industry "sub-standard"?

### Average \$44.80

According to the Department of Labor, wage rates in the aircraft industry in Feb. 1942 averaged 94.8c an hour and \$44.80 a week. (This is slightly down from January averages.) In other fields, hourly rates in shipbuilding, were 108.6c, weekly \$53.49; in automobiles, 115.8c an hour, weekly \$48.92; in machine tools, 92.8c and \$50.87. Aircraft hourly rates in 1940 were 74.3c and \$31.40.

Comparison of rates is necessary at this time, for NWLB has established a policy of considering as "standard," the high wage paid in the industry or allied field. Thus, if the \$1-a-day increase, or any part of it, is allowed by NWLB to General Motors workers, many of whom are engaged in aircraft construction, there is the danger that with that amount superimposed on the present high rates in the automotive industry, the "standard" wage for aircraft employes may be very greatly increased.

A further implication of the Board's method of defining a standard rate is to be seen in its opinions in other cases, indicating that the War Labor Board will not consider a wage scale in a non-union plant, or in a plant deemed to be dominated by a company union as "standard."

A question of vital interest is the relationship of "standard" wages with the cost of living. Are standards to be reviewed and changed with rises in the cost of living? That would seem to be fair, if imposed with impartial consideration for all concerned, even though it may be a distinct step on the way to inflation. Wages throughout all industry have risen 45% in three

years, while the cost of living index has jumped only 13.7%. With such a ratio, it would take a considerable while for wage standards based on cost of living to need adjustment upwards.

Unfortunately, there is little hope that NWLB will adopt any such elastic policy, which in the carrying out would revise pay for those in the lower categories of labor most directly affected by changes in cost of living. On the contrary, its proven basis has been to allow set increases throughout a plant from

top to bottom, thus continuing such inequalities as the President said should be remedied.

The National War Labor Board, fast assuming many prerogatives that its original charter did not include, is becoming the OPA of labor. Will it have the courage and foresight to "crack down" on unfair labor demands, set a fair over-all labor policy, and put an end to constant wage rate bickering?

Aircraft executives, facing renewals of wage agreements, would like to know, soon!

## On the Labor Front

ALUMINUM COMPANY OF AMERICA, Pittsburgh, Pa.

Hearing before NWLB on calendar for May 9 to continue to final decision, if possible.

AMERICAN AIRLINES.

Mediation signed with Air Line Mechanics Assn., International; changes in preamble, caption, and rates of pay.

AMERICAN BRASS CO., Waterbury, Conn.

Certified to NWLB; 10,000 workers demanding wage increase of 10c an hour, union security, improved working conditions. Conciliators of the Dept. of Labor have recommended 8c an hour increase in other American Brass Co. plants in Kenosha, Buffalo, and Detroit.

ARMSTRONG BROTHERS TOOL CO., Chicago, Ill.

Dispute which panel failed to settle with agreement, returned to NWLB and is now on the board docket.

BARBER-GREENE CO., Aurora, Ill.

Mediation hearings start May 7.

BROWN & SHARPE MFG. CO., Providence, R. I.

On Apr. 24-25 employees walked out as expression of dissatisfaction with speed NWLB is handling case. Returned after NWLB special mediator Robert Abell induced them to go back to work with promise of quick action; after which NWLB hearing was moved up from May 14 to May 4.

BUICK MOTOR CAR CO., (Aviation Engine Plant) Melrose Park, Ill.

NLRB issued directives for bargaining representation election among four groups of employes.

CORNELL DUBILIER CONDENSER CORP., S. Plainfield, N. J.

2,000 employes went on strike. WPB threatened to send Army in if they did not return to work. Upon their agreement to return, a special panel hearing was arranged by NWLB.

CURTISS-WRIGHT CORP., Airplane Division, Columbus, O. Plant.

NLRB election returned 1,557 votes for UAW-CIO, 382 for IAM-AFL, and 71 for no union. Two months before, NLRB had ordered election after charge that The Aircraft of Port Columbus was a company fostered union.

St. Louis plant employes received wage increases amounting to about 16c an hour, time-and-a-half for Saturdays and double-time for Sunday and holidays.

EATON MANUFACTURING CO., Cleveland, O.

UAW-CIO union shop agreement covering 4,500 employes in Detroit, Cleveland, Marshall, and Battle Creek plants signed. Members must remain in good standing, probationary employes must join union upon completion of probationary period. Male employes with one year seniority get \$75 vacation pay, female workers \$55. All with six month seniority receive \$25; double time after 11th hour of work on any single day and after eight hours on sixth consecutive day. Wage rates are still being negotiated. At the Wilcox-Rich division, Saginaw, Mich., riots broke out between AFL and CIO factions.

GENERAL MOTORS CORP., Detroit, Mich.

Wage demands of \$1-a-day increase, etc., sent back to Washington and certified by Secretary Perkins to NWLB after extended negotiations broke down. NWLB will hold hearings this month. In meantime, NWLB is studying 40 different work schedules now in operation in 85 GMC plants.

GOODYEAR AIRCRAFT CORP., Akron, O.

Case settled by agreement before NWLB panel, gives 5c an hour bonus retroactive to Jan. 4 to second shift workers, double time for seventh consecutive day. Disputes not settled by regular grievance procedure to be referred to impartial umpire with binding power.

HARRISON RADIATOR DIVISION, General Motors Corp., Lockport, N. Y.

In an NLRB election, 2,175 voted for UAW-CIO, 643 for no union.

MINNEAPOLIS-HONEYWELL REGULATOR CO., Minneapolis, Minn.

AFL protested NLRB order calling for new election. Former election was held last September; 2,100 ballots cast; majority of 15 to AFL.

NORMA-HOFFMANN BEARINGS CORP., Stamford, Conn.

Case is scheduled for mediation hearing May 21.

REYNOLDS METALS CO., Longview, Wash.

John D. Galey of Portland, Ore., has been appointed arbitrator by NWLB.

RYAN AERONAUTICAL CO., San Diego, Cal.

Special hearing by NWLB investigator Prof. Paul Dodd has been completed and a report with recommendations is to be made to NWLB.

SCHATZ MANUFACTURING CO., Poughkeepsie, N. Y.

Employes voted for UAW-CIO membership.

SHELL OIL CO.

Hearings continue in Houston, beginning May 11.

SPERRY GYROSCOPE CO., Brooklyn, N. Y.

Panel has completed hearings and will make report this month to the board with recommendations.

THOMPSON PRODUCTS INC., Cleveland, O.

At NLRB election, 10,000 employes rejected UAW-CIO by two-to-one vote.

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## Manufacturing Digest

YOUNG RADIATOR CO., Racine, Wis., has enlarged its Aircraft Products Division to handle the design, engineering and sale of Young aircraft oil temperature regulators, superchargers intercoolers, engine warming devices, light-weight cabin heaters, and other products.

PLIXWEVE MANUFACTURING Co., 3000 Bulos Ave., Burbank, Cal., contemplates being in its new Los Angeles location by Apr. 15. Production of plywood floor boards, pilot seats, and similar products will be expanded.

BOWLUS SAILPLANES INC., San Fernando, Cal., having built 100 ships for civilians, is winding up operations on orders for air sportsmen preparatory to devoting its facilities to the military program.

MORROW AIRCRAFT CORP., San Bernardino, Cal., has completed experimentation on plywood pilot seats. Elimination of 80% of the metal used in the all-metal seat, plus conformity with weight, strength, and dimensional requirements, is claimed for the product.

LOCKHEED and VEGA's education division is supervising first hand instruction by experts for pilots and mechanics from units of the U. S. Air Forces, RAF, and Royal Australian Air Forces in the operation and maintenance of Hudson and Ventura bombers and Lightning P-38 interceptors.

REPUBLIC AVIATION CORP. employs numbering in the thousands recently contributed work for the production of a Republic P-47 Thunderbolt pursuit which was accepted for the Army Air Forces on Mar. 31 by Robert A. Lovett, Assistant Secretary of War for Air.

CONSOLIDATED AIRCRAFT Corp.'s plant operations at the Ft. Worth division have been stepped up to an around-the-clock schedule. Formerly on a two-shift 20-hour working schedule, the plant now works three-shifts 24 hours. First two shifts work nine hours each; third shift, six hours.

HUDSON MOTOR CAR CO.'s aircraft division in Detroit was dedicated on Mar. 31. A huge building which previously was used to fabricate auto parts is now crowded with bomber fuselage sections. Hudson is also in production on airplane engine parts.

GLENN L. MARTIN CO. employees now benefit from a group insurance plan worked out with officials of Connecticut General Life Insurance Co. The program is designed to provide comprehensive accident and life insurance for every employee. Policies are issued on a salary basis and range in value from \$1,000 to \$10,000.

MAYTAG CO., Newton, Ia., reports that its aluminum foundry is now producing heat-treated aircraft castings. In Sept. 1941 the company received a contract for bomber sub-assemblies and has since received additional similar contracts.

CURTISS-WRIGHT CORP.'s Airplane Division announces development of an emergency oxygen "bail

out" mask for high altitude testing of the P-40E and other Curtiss aircraft. The device protects a pilot forced to parachute from a damaged plane between 20,000 and 40,000 feet, or in case the plane's own oxygen system should fail.

GENERAL CONTROLS Co., Glendale, Cal., now owns Cunningham Control Co. of Burbank, according to W. A. Roy, president of the former concern. He said L. L. Cunningham would remain with the company. Principal production is in cabin testing controls, aircraft-type electric valves, and direct current relays.

AMERICAN PROPELLER Corp.'s quarter-mile-long building, begun six months ago, is now completely enclosed and construction is running ahead of schedule, according to Wayne Eddy, plant manager. Car-loads of machinery from dozens of machine tool plants are arriving at the Toledo concern's new location.

SPARTAN AIRCRAFT Co., Tulsa, Okla., now holding new contracts, has completed plans for a major expansion which will call for doubled floor space and tripled operating personnel by the end of the year.

REPUBLIC AVIATION Corp. reports that 76 employes were called to active duty with the armed forces during the first three months of 1942. "Selective Service boards . . . have granted deferments for occupational reasons to a substantial proportion of the trained and qualified men who work for the company," according to the report.

ALUMINUM COMPANY of America will operate a DPC plant in the Chicago area, ground for which was broken on Apr. 20. The aluminum sheet mill will be one of the largest single buildings ever constructed in the Chicago region and will employ between 6,000 and 7,000 men. Aluminum sheet, alloyed with magnesium to make duralumin for aircraft structures, fabrications, and fuselages will be the product.

CHEVROLET DIVISION of General Motors Corp. will erect a plant for the output of aluminum forgings for aircraft, it was announced in Detroit by M. E. Coyle, general manager.

PRATT & WHITNEY Aircraft Division of United Aircraft Corp., East Hartford, Conn., is planning to operate a DPC plant at Springfield, Mass., on which construction will begin shortly. Employment at the plant, to be used for manufacture of engine parts, is expected to reach 6,000.

LUSCOMBE AIRPLANE Corp., West Trenton, N. J., has received a million dollar RFC loan for expansion facilities, it is announced by Matthew J. Hickey, Jr., newly elected chairman of the board. Recently taken over by the alien property custodian because of German stock ownership, Luscombe is now engaged in subcontract work.

(Continued on page 41)



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## Automotive Council for War Production

PERSONNEL of the Automotive Council for War Production is listed below. Purpose of the Council, a voluntary and cooperative organization of companies engaged in manufacture of war equipment, is to expedite mass production of materials and articles and to cooperate with agencies of the government for that purpose.

### Officers and Directors

PRESIDENT—Alvan Macauley, chairman, Packard Motor Car Co. VICE PRESIDENTS—Clarence W. Avery, president, Murray Corporation of America; Robert F. Black, President, White Motor Co.; C. C. Carlton, Vice President, Motor Wheel Corp.; Paul G. Hoffman, President, Studebaker Corp.

TREASURER—George W. Mason, President, Nash-Kelvinator Corp.

SECRETARY—John W. Anderson, President, Anderson Co.

DIRECTORS—I. B. Babcock, president, Yellow Truck & Coach Manufacturing Co.; A. Edward Barit, president, Hudson Motor Car Co.; W. P. Brown, president, Briggs Manufacturing Co.; E. A. Clark, vice president, Budd Wheel Co.; A. T. Colwell, vice president, Thompson Products Co.; Charles Davis, secretary-treasurer, Davis Tool and Engineering Co.; Edsel Ford, president, Ford Motor Co.; Joseph W. Frazer, president, Willys-Overland Motors Inc.; K. T. Keller, president, Chrysler Corp.; H. W. Knapp, secretary, McQuay-Norris Manufacturing Co.; P. V. Moulder, Truck Division, International Harvester Co.; C. E. Wilson, president, General Motors Corp.

MANAGING DIRECTOR—George Romney.

### Product Divisions

(concerned with aircraft manufacture)

DIRECTOR—Donald Blanchard, on loan from the staff of the Society of Automotive Engineers.

AIRCRAFT ENGINES—R. N. Brown, Packard (chairman); J. W. Hines, Studebaker; G. H. Bernard, Nash; W. R. Gerber, Chrysler; N. L. Bean, Ford; R. J. Beebe, Cadillac; E. R. Jacoby, Continental; Hugh Dean, Chevrolet; C. A. Chayne, Buick; Arthur Nutt, Wright Aeronautical.

AIR FRAMES—C. E. Bleicher, De Soto (chairman); W. DeGroat, Ford; Joseph Eskridge, Hudson; A. J. Wetlaufer, Briggs; L. C. Hill, Murray; R. W. Clark, Hayes; E. W. Higgins, Woodall Industries; A. J. Fisher, Fisher Body; William C. Pothoff, Goodyear; R. I. Roberge, Ford; Don Berlin, General Motors.

### SAE Adds Six Members to War Engineering Unit

BECAUSE of the growing number of requests for engineering help received from the War Dept., the WPB, and the Automotive Council for War Production, the war engineering board of the Society of Automotive Engineers has been expanded by the addition of six members, according to J. C. Zeder, chairman of the board and chief engineer

of Chrysler Corp.

New members are Arthur Nutt, vice president of engineering, Wright Aeronautical Corp.; Don Berlin, aircraft engineer, General Motors Corp.; Earl H. Smith, executive engineer of the aircraft engine division, Packard Motor Car Co.; L. R. Buckendale, vice president and chief engineer, Timken-Detroit Axle Co.; C. G. A. Rosen, director of research, Caterpillar Tractor Co.; and Ralph R. Teeter, vice president, Perfect Circle Co.

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**Making it Official:** The Navy Dept. lost no time in getting its name on Brewster Aeronautical Corp.'s letterheads after taking possession of the firm's three plants last month.



**No Gearing Necessary:** This section of Lockheed Air Terminal shows Lockheed Lightning P-38 interceptor-pursuit receiving final tuning before being delivered to the U. S. A one-place ship, the P-38 is heavily armed with all guns and cannon so placed that it is not necessary to gear firing rate to propellers.



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To Aviation executives everywhere . . . to the personnel men of the Aircraft Factories and the Airlines . . . to Air Corps and CPTP Training Center Operators . . . we've been happy to serve you. Continue to call on us. Though we may not always be able to meet your quantity demands for trained men, the QUALITY and CALIBER of the men trained at Lincoln will continue to meet your exacting requirements.

E. J. SIAS, President and General Manager

### Lincoln Aeronautical Institute Lincoln Airplane & Flying School

GOVERNMENT APPROVED FOR FLYING AND MECHANICS  
LINCOLN NEBRASKA

### Solar Opens Midwest Branch; Leases Iowa Factory From DPC

SOLAR Aircraft Co., San Diego, Cal., has concluded negotiations for the leasing of a Ford Motor Co. plant in Iowa from the Defense Plant Corporation, the west coast concern announced on May 1.

Solar's new middle western plant will operate as a branch of the main San Diego factory and will be under the direct supervision of D. M. Miller, vice president and operations manager. It is expected that production will be under way by July 1.

Among those who will work with Miller at the Iowa branch are Parker S. Seitz, Vincent Hardy, and Lester E. Ernest. Acting in place of Miller as San Diego operations manager will be Earl D. Foster. A. J. Biddle will take over Hardy's position as materiel division manager. Clyde Seymour has been appointed production control manager at the San Diego location.

### Manufacturing Digest

(Continued from page 37)

GENERAL AIRCRAFT Corp., Lowell, Mass., has discontinued production of Skyfarer planes to fill "substantial" War Dept. contracts. "Research is being continued on the Skyfarer and on the further development of its principle," company states.

CONSOLIDATED Aircraft Corp., San Diego, Cal., and North American Aviation Inc., Inglewood, Cal., according to legal records, have filed incorporation papers with the Arizona Corporation Commission seeking plant permits from that state.

AERONCA AIRCRAFT Corp., Middletown, O., has set aside a special department to continue experimental work revolving around three airplanes for the peace-time aviation era. During the latter part of 1941, the Super Chief, side-by-side model, was discontinued, and the company is now building only L-58-Bs for the Air Corps, trainers for CPTP, and lightplanes for CAP. A number of ships are also being built for export with permission from Washington.

RYAN AERONAUTICAL Co., San Diego, Cal., has opened a Washington office with J. K. Wiseman in charge.

NORTH AMERICAN Aviation Inc. has appointed Batten, Barton, Durstine & Osborne to handle its advertising account. The account will be handled in the Los Angeles office of the agency.

### Classified Ads

FOR SALE: SLIGHTLY USED AIRPLANE TRANSMITTER AND RECEIVER. Western Electric 13 C Transmitter and 27 A Receiver in A-1 condition. Reasonable. Write for further details. W. W. Low, Walgreen Company, 744 Bowen Avenue, Chicago, Ill.



★ In keeping with the traditions of Southern California, the **BILTMORE HOTEL** . . . largest and finest in Western America, invites you to enjoy its gay, festive, glamorous atmosphere to the fullest.

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1500 ROOMS • Singles \$4 to \$8  
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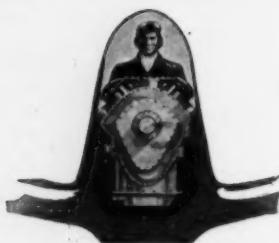
### THIS CONCERNS YOU!

YES—and millions of travelers who will consider the selection of a New York City hotel this year. The one that offers you most for your hotel dollar is the easiest to remember: the Hotel New Yorker. It has everything! Location, superb service, splendid accommodations, mouth-watering cuisine, and a fine reputation to maintain. It is New York's largest and most popular—3,000,000 guests since 1930. Imagine!



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**PROTECTO-RAY**  
BATHROOMS  
...they're ultra-violet rayed!

# "No broader than a Pilot's Shoulders"



THAT'S an important specification for an airplane engine, when you want every mile of speed you can get from a military fighter plane.

When you cut down wind-resistance, you get more good from horsepower and fuel, because it's less effort to push the plane through the air.

And only with a liquid-cooled engine can you build such a plane.

So General Motors undertook the long job of developing the Allison engine—starting back in 1930.

And now that thousands of these engines have gone into service, America can be glad that someone tackled that job.

They're going into planes for the



*The experience of General Motors is full-rounded and without bias in the airplane engine field. In addition to the liquid-cooled Allison engine, GM is under license to build air-cooled radial engines in its Buick and Chevrolet plants.*

U. S. Army and the R. A. F. And they've been meeting the test of combat everywhere—in Hawaii, the Philippines, Europe, Africa, the Middle East and along

the Burma Road. Each succeeding month, in fact, adds to the evidence that the Allison engine is unsurpassed for the job assigned to it.



LIQUID-COOLED AIRCRAFT ENGINES

**Allison**  
DIVISION OF



## Personnel in the News

Jack Wiseman, former automobile executive, has been appointed as a special representative of Ryan Aeronautical Co. with headquarters in Washington. He will coordinate his activities with Sam C. Breder, sales manager.

William G. Zink, with B. F. Goodrich Co. in 1918 and in the company's aviation division for the last 11 years, will be in charge of a new aviation branch office in San Francisco, it is announced by J. S. Pedler, manager of B. F. Goodrich Aeronautical

Albert Grant has been appointed vice president in charge of manufacturing of Young Radiator Co., Racine, Wis., manufacturer of heat exchanger units for combat planes.

George A. Meyer and Mundy I. Peale have been elected vice presidents of Republic Aviation Corp. and will be assigned to the direction of "certain expansion activities" of the corporation. W. Wallace Kellett, chairman of the board, has announced. Meyer joined the company in 1937, and in 1939. Meyer was facilities manager of the Republic plant at Farmingdale, N. Y.; Peale was assistant director of military contracts.

J. G. Funseth has been named general maintenance foreman at the Indianapolis plant of Curtiss-Wright Corp.'s Propeller Division, succeeding W. J. Dillon, who recently was promoted to assistant plant engineer in charge of all maintenance. At the Pennsylvania plant of the Propeller Division, Ernest Easter has been appointed assistant chief inspector and W. J. McComb has been named to supervisor of gage procurement and inspection department. O. C. Montgomery, H. C. Hart, and James E. Sudding were named working group leaders in the finish magnaflux department.

Paul Johnston, coordinator of research for the NACA, has been appointed manager of Curtiss-Wright Corp.'s office in Washington. He was editor of "Aviation" until Jan. 1, 1940, when he joined the NACA. Johnston is the author of numerous aviation texts.

Norman Larson, manager of Pacific Aircraft Sales Co., Burbank, Cal., a well known figure in western aviation circles, has been named vice president of Bowles Sailplanes Inc., San Fernando, Cal. Larson is president of the Aviation Country Club in southern California.

Moher Story Hutchins, president of Hutchins Advertising Co. Inc., Rochester, N. Y., has been appointed a captain in the Army Air Forces. His advertising agency handles the accounts of Lycoming Division of Aviation Manufacturing Corp., and Piper Aircraft Corp.



Wiseman

Zink

Osborne

W. C. Osborne, former production superintendent for Murray Corporation of America, has been appointed superintendent of outside production by Northrop Aircraft Inc., according to Gage H. Irving, vice president and assistant general manager. Irving said Northrop expects to more than double the number of suppliers now manufacturing for the company.

All directors of Boeing Airplane Co. were re-elected at the company's annual meeting, held late in April. They are: William M. Allen, Harold E. Bowman, Darragh Corbet, Claire L. Egtvedt, P. G. Johnson, Fred P. Laudan, J. E. Schaefer, Dietrich Schmidt and H. O. West. All present officers of Boeing Airplane and Boeing Aircraft Co., Seattle manufacturing subsidiary, were re-elected. Officers of Boeing Airplane are: P. G. Johnson, president; Claire L. Egtvedt, chairman, H. O. West, executive vice president; J. P. Murray, vice president and eastern representative (Washington, D. C.); J. E. Schaefer, vice president (Wichita, Kan.); and Harold E. Bowman, secretary and treasurer. Officers of Boeing Aircraft are the same, with the exception of Schaefer, and with the addition of Fred P. Laudan, vice president.

Organizational promotions in North American Aviation's three plants have been announced by J. H. Kindelberger, president. Those affecting personnel in the home plant at Inglewood, Cal., are as follows: Ralph Ruud, formerly general shop superintendent, now assistant factory manager; Rulon Nageley, formerly general purchasing agent, now assistant director of material; William Zuetell, formerly assistant purchasing agent, now purchasing agent. In the Dallas, Tex., plant: K. P. Bowen, formerly assistant chief engineer and production manager, now assistant factory manager; J. W. Hincliffe, formerly assistant purchasing agent, now purchasing agent. In the Kansas City, Kan., plant: Carlton Wolf, formerly assistant chief engineer, now assistant factory manager; W. T. Lynn, formerly assistant purchasing agent, now purchasing agent.



Johnston

Larson

Monson

Loening

Grover Loening has resigned as a director of Platt-LePage Aircraft Corp., Eddystone, Pa., "in order to be free to develop a helicopter of his own design on which he is now conducting research," according to the announcement.

Claude N. Monson has been elected as vice president of Northrop Aircraft Inc. by the directors. He will continue his duties as treasurer of the company, having been its principal financial officer since the firm began manufacturing operations in 1940. Other officers of Northrop are M. E. T. Cohu, chairman of the board; John K. Northrop, president; Gage H. Irving, vice president of production; Theodore C. Coleman, vice president of sales; Moyer W. Stephens, secretary; and George Gore, assistant secretary.

A. P. Boucher, district manager of the Detroit office of Lincoln Electric Co., Cleveland, has been called to active duty in the Army Reserve. His duties will be assumed by C. H. Buckmaster of the company's Pittsburgh office, and J. H. Cunningham of the Detroit office will take over Buckmaster's duties. The company simultaneously announced that George S. Bain is being transferred from the Detroit area to the Saginaw area.

Francis A. Callery, vice president in charge of finance of Consolidated Aircraft Corp., has been made a director of Gar Wood Industries.



... and that goes too for thousands of other vital positions on America's fighting airplanes where careful designers have placed Elastic Stop Nuts. These self-locking self-gripping fastenings have proved, through fifteen years of reliable service on aircraft, that they remain tight under vibration, stress, shock, exposure to weather, and heavy duty.

There are more Elastic Stop Nuts on America's airplanes, tanks, and other war equipment, than all other lock nuts combined.

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# WE Beat THE AXIS TO IT...



America has been "on the alert." In spite of long years of building an evil war machine, the Axis will find that American science and industry are still far ahead. More than five years ago Bell Aircraft initiated ideas in aircraft design which allow the Bell Airacobra to carry the world's heaviest fire power among

single engine fighters. In helping to give America mastery in the sky, it's a reassuring fact that the Airacobra began to get the benefits of Bell Aircraft's technical and experimental resources five years before it was to be called on to prove its practical superiority.



**BELL Aircraft**  
**CORPORATION**  
BUFFALO, NEW YORK, U. S. A.  
*Making Aviation History*

**BELL** CRAFT

## Fairchild Aviation

Fairchild Aviation Corp. net earnings for the year ended Dec. 31 were \$1,060,981 after depreciation, interest and taxes. \$1.14 each on 337,032 capital shares, compared with \$648,698, or \$1.92, in 1940.

James S. Ogsbury, president, stated that company had orders on hand and under negotiation sufficient to keep the organization at peak production for many months to come.

Thus far, working capital requirements have been met without new financing and the report stated that it remained the policy of the company to avoid dilution of present stockholders' equities through issuance of additional securities unless found to be absolutely necessary. Declaration of moderate dividends would therefore be continued to conserve working capital. Total dividends in 1941 amounted to \$1.25 of which 50¢ was paid on Aug. 8 and 75¢ on Dec. 22.

Ogsbury said that although it had been a policy of the company consistently to reduce prices on orders duplicated, the unusual volume of business has in many cases enabled the company to reduce costs and overhead materially. Therefore, the government has been advised that in cases where costs prove to be out of line with prices quoted, the company expects to reduce future prices to adjust this condition.

Under the unusual conditions prevailing, stockholders were told, it has been necessary to expand operations greatly, requiring extraordinary expenditures for plant arrangement, acquisition and training of personnel, etc. Considered as elements of costs and with the possibility of similar expenses required for post-war transformation, a reserve of \$600,000 has been established by charging that amount to current operations.

The new addition to the plant, started in Nov. 1940, has been in full operation since May, 1941. This, together with multiple shift operations and a largely increased use of subcontracting facilities, has enabled the company to speed production rate so that government requirements for Fairchild Aviation Products might be fulfilled.

Balance sheet Dec. 31: current assets \$3,995,813 compared with \$3,424,062 year ago; current liabilities \$4,581,862 compared with \$2,523,839.

## Aviation Corp.

Report for quarter ended Feb. 28, 1942, shows earnings for Aviation Corp., New York, N. Y., of \$1,002,844 compared with \$198,093 in the same quarter a year ago.

Consolidated profit and loss statement for the quarter shows net sales of \$7,274,968, plus other income of \$605,772 which includes dividends received amounting to \$494,226. Cost of sales were \$5,429,257; expenses included selling, advertising and service \$81,749, general and administrative expenses \$381,783, federal capital stock tax and state corporate taxes \$65,056. Provision for estimated federal income and excess profits taxes was set at \$809,574. Company paid a dividend of 10¢ a share on capital stock to stockholders of record April 10.

## Liberty Aircraft

Liberty Aircraft Products Co. earned \$43,035 in 1941, equal to \$2.22 each on 19,000 shares, compared with \$239,706, or \$1.20, in 1940. Current assets as of Dec. 31 were \$1,530,425 compared with \$64,098 in 1940; current liabilities \$2,856 against \$443,507.

## Aero Supply Mfg. Co.

Tentative first quarter earnings for Aero Supply Mfg. Co. Inc., Corry, Pa., were \$206,304 after all charges and provision for taxes, against \$177,704 last year.

## United Aircraft Turns Back 16 Million on War Contracts

STATEMENT of United Aircraft Corp. and subsidiaries for the quarter ended Mar. 31, 1942, discloses that thus far this year \$16,000,000 has been relinquished to the government as a result of contract re-negotiations, compared with \$10,000,000 thus turned back during the entire year of 1941.

Shipments for the quarter were \$110,115,884, compared with \$54,900,000 in the first quarter and \$104,000,000 in the last quarter of 1941. Net profit was \$3,476,580, or \$1.19 a share on 2,656,691 shares of common stock outstanding, after provision for taxes and dividends on preferred stock. Net for the same period last year was \$3,229,496.

Backlog of unfilled orders, according to statement by the company, amounted to \$485,518,787 on Jan. 1, 1942. New business booked during the first quarter of \$301,862,125, less shipments of \$110,115,884, brought Mar. 31 backlog to \$677,265,028.

Consolidated profit and loss accounts for the period show total operating reve-

nue of \$110,137,717, of which \$1,130,713 was derived from surcharges on performance of contracts with the British and French, and \$21,832 from royalties and proceeds from sale of design and manufacturing rights, less foreign taxes. Operating costs totaled \$92,589,680 and included cost of sales \$85,984,822; moving expenses and retirement of losses on rearrangement of plants \$158,566; depreciation \$335,869; provision for amortization and retirement of emergency plant facilities \$1,044,250; engineering, development, selling, and administrative expenses \$5,366,172.

Allowance made for estimated federal taxes amounted to \$14,216,387 and included \$3,198,687 for income taxes and \$11,017,700 for excess profits taxes.

United Aircraft president E. E. Wilson's statement to stockholders, issued with the quarterly report, warned that due to taxes, contract readjustments, and the necessity for building up reserves against post-war difficulties, earnings and dividends during the war period will be considerably below those of 1940 and 1941.

## Aviation Corp. to Organize Two New Compensation Plans

REVERSING the usual conception of a pension, Aviation Corp. stockholders at their annual meeting voted in favor of a "Contributory Pension Plan" applicable to only 85 officers and employees of the organization and in no case applying to anyone earning under \$4,200 a year. At the same time, an "Extra Compensation Annuity Plan" was approved which applies to seven officers and about 4,050 employees.

The purpose of this plan is to "hold from employment elsewhere most valued and experienced employees . . . and to make continued employment . . . more attractive." Cost of the plan will be shared by the eligible employees, the corporation and its wholly-owned subsidiary, the American Propeller Co.

At the same meeting, 11 directors were elected as follows: C. Coburn Darling, Victor Emanuel, Tom M. Girdler, L. I. Hartmeyer, Carlton M. Higbie, L. B. Manning, Benjamin H. Namm, Thomas A. O'Hara, R. S. Pruitt, H. Dazell Wilson and William F. Wise.

During last fiscal year, Emanuel, president, received remuneration from corporation and subsidiaries of \$44,150 plus a cash bonus of \$35,000; Wise, executive vice-president, \$30,189 salary and bonuses aggregating \$43,529; Pruitt, director's fees of \$1,150 (his law firms of Pruitt & Greaves and Pruitt, Hale & MacIntyre, also received \$184,090).

Options were granted to Wise to buy 11,291 shares of treasury capital stock at \$3 per share any time on or before April 22, 1943; an extension of option to Dec. 31, 1942, was granted Pruitt to buy 2,500 shares of common of Vultee Aircraft, Inc., owned by Aviation Corp. at \$10 per share. Similar extension of options to Dec. 31, 1942, to purchase Vultee common at \$10 per share were made to Hartmeyer for 1,500 shares; to Pruitt for 2,500 shares; and one to Walter A. Mogenson, treasurer, for 2,000 shares.

Common stock holdings of Aviation Corp. by directors: Darling, 30,600; Emanuel, 45,000 and 19,000 beneficially owned through personal holding com-

panies; Girdler, 2,120; Hartmeyer, 500; Higbie, 177 through Carlton M. Higbie Corp. and 27,370 additional belonging to a trust in which he has a life interest; Manning, 97,954; Namm, 312 and 506 through personal holding companies; O'Hara, 500; Pruitt, 53,600 with 15,900 additional as trustee for others; Wilson, 5,000; Wise, 6,200; Emanuel & Co., underwriters, 141,753 of which 115,213 were held for the account of customers.

Capital stock holdings of Aviation & Transportation Corp. by directors: Darling, 30,000; Emanuel, 41,858 and 18,000 owned through personal holding companies; Girdler, 2,000; Hartmeyer, 100; Higbie, 500 through his corporation; Manning, 136,789 and 20,000 additional as trustee for others; Namm, 100 through personal holding company; and Pruitt, 47,334 and 15,000 additional as trustee for others.

## Reynolds Metals

Reynolds Metals Co. reports earnings for 1941, after allowance for all taxes of \$2,867,674, or \$2.53 each on 1,023,662 1/6 common shares, after payment of \$275,000 for dividends on the 5 1/2% preferred. This compares with \$2,428,277, or \$2.10, in 1940.

Net sales were \$48,602,557 compared with \$29,157,971; net current assets \$12,195,961 against \$8,971,925; net investment in plant facilities \$29,679,625 against \$11,332,262. Number of employees at present is more than 13,650, an increase of over 100% over last year.

## Kellett Autogiro

Kellett Autogiro Corp. sales for first quarter of 1942 amounted to \$929,729, up 307% over \$228,315 for 1941 period. Shipments in the last quarter of 1941 were \$669,349.

## Aircraft Accessories

Aircraft Accessories Corp. of Missouri balance sheet as of Jan. 31: assets \$891,021; current assets \$610,612; current liabilities \$418,984; capital stock \$530,000; surplus \$132,963 (red).

## Thompson Products

### May Offer New Stock to Holders

THOMPSON Products Inc. is reported planning a financing program which will enable the company to obtain over \$1,000,000 to be used for working capital. Under the plan being considered, present shareholders would be given rights to buy additional stock for a limited period after which any unsubscribed portion would probably be offered publicly through underwriters.

Meanwhile, at company's annual meeting, F. C. Crawford, president, told stockholders that sales during 1942 should be double the \$44,322,596 figure of 1941. "We are aiming at gross sales of about \$85,000,000 . . . Production of aircraft products during March was approximately three times total aircraft production for the full year of 1939."

## Wright Aeronautical

Annual report for 1941 of Wright Aeronautical Corp., subsidiary of Curtiss-Wright Corp., shows net profit for the year of \$10,255,873 after deductions for depreciation, amortization, provision of \$1,132,522 for incentive compensation and \$45,795,366 for federal taxes. This equals \$17.10 a share on 599,857 shares of no-par-value capital stock. In 1940, when taxes amounted to \$12,689,060, net profit was \$6,856,284, or \$11.09 a share.

Consolidated balance sheet for year ended Dec. 31, 1941 shows total assets of \$178,572,084 compared with \$113,594,220 in 1940 and \$64,977,863 in 1939. Current assets of \$150,341,302 included cash \$46,459,665; tax anticipation notes \$8,000,000; accounts receivable \$28,539,938; advances to supplies \$5,428,157; inventories \$61,913,540; preparation costs for future production \$13,103,341; prepaid taxes and insurance \$1,476,759; plant property and equipment \$13,634,423.

Current liabilities totalled \$129,349,650, with accounts payable amounting to \$14,287,201; accrued wages and taxes \$38,868,894; deposits on uncompleted sales contracts \$62,638,927; provision for federal taxes \$46,739,059; provision for incentive compensation \$1,123,307.

Deferred income was \$6,523,655; deposits for manufacturing facilities and preparation costs \$13,103,341; reserve for service guaranty \$3,060,000; reserve for future engineering development and post-war readjustments \$4,125,000.

Capital stock was \$2,999,285; capital surplus \$1,540,905; earned surplus since Dec. 31, 1931, \$17,870,337.

## Northrop Aircraft

Northrop Aircraft Inc. reports for quarter ended Jan. 31 a net profit of \$282,408 after taxes, depreciation, amortization and contingent reserve. This compares with net in preceding quarter ended Oct. 31 of \$44,309, or 78¢ per share against 12¢.

Company's fiscal year ends July 31. Capital stock on July 1 consisted of 282,305 shares of \$1-par Class A common and 74,637 shares of \$1-par Class B common. During the quarter ended Jan. 31, 1941, the company was in the development stage and no comparative figures can be given.

## Braniff Airways

Braniff Airways Inc. had a net loss of \$179,442 in 1941 against \$14,446 in 1940. Company obtained retroactive mail pay in 1941, of which \$89,378 was applicable to 1940, resulting in a net income of \$74,932 in that year. A similar application is pending for 1941.

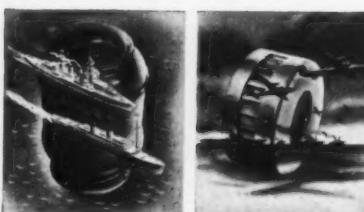


## *Ears that hear miles into the sky*

SENTRIES of the night must glean even the faintest murmur of an airplane in the skies. From this sound, the location and direction of flight must be determined, searchlights pointed, the plane identified, and, if necessary, intercepted.

To do this, the sensitivity of

the human ear is magnified and made keenly aware of direction by the huge mechanical ears of the Sperry Sound Locator.



Among Sperry products playing a vital role in the war effort are the Gyro-Compass, Gyro-pilot, Directional Gyro and Gyro-Horizon.

This instrument is but one of the many units manufactured by Sperry to increase the efficiency and effectiveness of the armed forces.

# SPERRY GYROSCOPE COMPANY, INC.

BROOKLYN, NEW YORK

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Some fixed price provision \$12,175,433 this type on a cost company which can increased 1. costs and intensive production for the year.

Federal \$10,000. For different 1935 was \$1

Gross sales compared was \$1,066.51 per capita \$2.79, in

The East Central Motor Grumman Grumman wings, engines necessary available com man will r

"Further capacity by increased sales of certain continued man, pres

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Design a the Navy proportions. Am private own the latest deliveries of 1941 report

The num 1941 amount been delivered years, while delivery in times those

Balance \$17,310,843; current lia plus \$942,3

1941 report

## Company Earnings

## Grumman Shows Sales Jump, With Decline in Net Earnings

TYPICAL of the situation in some sections of the aircraft industry, Grumman Aircraft Engineering Corp. reports tremendously increased sales accompanied by an actual decline in net earnings.

Some of this may be traced to fixed price contracts which make no provision for changes in costs as \$12,754,436 of net sales were under this type of contract, with \$9,683,244 on a cost-plus-fixed-fee basis. The company lists among the factors which caused the decline in net: increased labor rates, higher material costs and the indirect cost of the intensive plant and personnel expansion program carried out through the year.

Federal taxes accounted for \$1,10,000. However this was not much different than in 1940 when \$1,008,35 was paid out for taxes.

Gross sales in 1941 were \$21,858,680 compared with \$8,811,294 in 1940. Net was \$1,066,683, or \$2.10 each on 508,060 1/2-par capital shares, against \$1,415,964, or \$2.79, in 1940.

The Eastern Aircraft Division of General Motors Corp. will manufacture Grumman models for the U. S. Navy. Grumman will supply design data, drawings, engineering and other services as necessary to GM. No information is available concerning what models Grumman will release for GM manufacture.

"Further expansion of productive capacity by additional building, by increased subcontracting and by 'dispersal' of certain manufacturing operations has continued at a rapid pace," L. R. Grumman, president, said in his annual report.

"Under the 'dispersal' plan, which we believe to be highly economical and effective, complete departments are moved into existing buildings, obtained by lease, within a reasonable distance of our main plant. Additional assembly is, by this method, made available at once in our plant and, at the same time, otherwise unused facilities in this vicinity are put to work."

Design and production of airplanes for the Navy has become an ever-increasing proportion of the company's total volume. Amphibians for commercial and private owners were discontinued during the latter part of the year. Actual deliveries of airplanes at the end of the first quarter of 1942 (not a part of the 1941 report) are in excess of the production schedule.

The number of planes delivered in 1941 amounted to more than all that had been delivered in the preceding four years, while the number scheduled for delivery in 1942 is approximately four times those delivered in 1941.

Balance sheet as of Dec. 31: assets \$17,310,843; current assets \$11,885,658; current liabilities \$8,923,017; capital surplus \$942,340; earned surplus \$1,817,687.

## TWA

TWA Inc., Kansas City, Mo., reports net loss of \$310,650 for quarter ended Mar. 31, 1942. Net loss during the first quarter of 1941 was \$957,761. Total revenues for the period were \$3,113,474, or an increase of 41.5% over revenues for the same period a year ago. Mail revenue amounted to \$807,353, and express revenues were \$184,878, with mail pound miles up 64% and express pound miles up 187% from the first quarter of 1941.

## Noorduyn Aviation

Noorduyn Aviation Ltd. reports 1941 net profit of \$83,539 after provision for depreciation of \$426,130, provision for taxes of \$160,000 and reserve for contingencies of \$75,000. Company had loss of \$22,808 in 1940.

The net profit transferred to surplus absorbed a previous deficit of \$79,021 and resulted in an earned surplus balance of \$4,518. Profit is equal to 89c each on 93,500 no-par shares.

Balance sheet Dec. 31: assets \$7,111,511; current assets \$6,042,465; current liabilities \$6,170,493.

W. L. Bayer, president, states that the backlog of uncompleted orders on Dec. 31 amounted to \$36,625,000. "Deliveries of completed aircraft and parts and billings of unfinished work in process during the year, not included in the year end backlog figure, amounted to \$9,733,300." Backlog on Dec. 31, 1940, was \$5,635,000.

## American Airlines

American Airlines Inc., New York, N. Y., reports net profit for the quarter ended Mar. 31, 1942, of \$349,392, compared with \$71,060 in the first quarter of 1941.

Pointing out that this figure depends on final decision on the CAB's ruling drastically reducing the company's mail rates, A. N. Kemp, new president of American, states that the proposed rate reductions, if made effective, would reduce the quarterly profit to a net loss of approximately \$41,000. Mail revenue for the March quarter, amounting to \$1,092,998 under old rates, would be only \$527,430 if CAB's proposals were in effect. The Board has agreed to reopen the rate case for submission of new evidence.

Revenue plane miles totalled 7,823,003 for the first quarter this year, against 6,513,581 in the same period of 1941. Revenue passenger miles increased from 69,596,009 to 97,874,503 with return from passenger revenues up from \$3,510,847 to \$4,923,910. Express revenue was \$242,609 compared with \$143,356 a year ago, and total revenues were \$6,342,422 compared with \$4,753,472.

Provision for federal income taxes for the quarter, based on the Revenue Act of 1941, was \$198,200 against \$22,400 in the first quarter of 1941.

## Briggs Mfg. Co.

Briggs Manufacturing Co. and domestic subsidiaries had a 1941 net profit of \$5,510,812 after depreciation and all other deductions, equal to \$2.83 each on 1,947,000 shares, compared with \$6,130,812, or \$3.09 on 1,979,000 shares, in 1940.

Annual report shows that whereas in Apr. 1941, inventory was composed largely of automotive parts, it now consists almost entirely of aircraft parts. The company's business in 1942 will depend upon the speed with which it can complete all the retooling for war work and the delivery of new machines. However, when the company is in full production on all the war contracts now on the books, its dollar volume should be more than double the best peacetime rate.

Adapting the company to war work has taken three courses: (1) changing of the manufacturing and engineering departments to munitions and aircraft making; (2) the adapting of machines and plants; and (3) the preparation by means of a training school of employees.

In its airplane parts work, the company has applied automobile manufacturing methods. It has developed new ways to substitute welding for riveting and devised other short cuts. Wherever possible, it adapted its domestic production machinery to war work.

In 1941 employment reached 23,000 and is expected to be greatly increased during 1942. More than 1,000 employees at a time are being trained for war work in a special school, the preparatory period lasting from four to 10 weeks. Special attention is being given to training women.

Balance sheet as of Dec. 31: assets \$44,752,510; current assets \$28,068,845; current liabilities \$10,225,870; earned surplus \$21,608,245.

## Edward G. Budd

Profit for the quarter ended Mar. 31, 1942 was reported by Edward G. Budd Mfg. Co., Philadelphia, Pa., to be \$3,954,020 after all charges except provision for taxes. After deducting \$3,099,000 estimated necessary for income and excess profits taxes, the company had net profit of \$855,020. Net for the first quarter of 1941 was \$639,905 after provision for taxes of \$1,105,500.

## Aircraft Mechanics

Aircraft Mechanics Inc. had net profit after all charges in 1941 of \$299,169 and gross sales were \$1,048,972.



## Today's Emergency CALLS FOR MEN OF LEADERSHIP QUALITY

Changes in personnel, the requirements of America at War have made it essential that men in commercial aviation be capable of handling the job in hand and equipped to look ahead as well.

Parks graduates are qualified to rise to leadership because of the thoroughness of their training — they are educated to develop their capabilities for future increasing responsibilities.

Whether in piloting, operations, maintenance, or manufacturing, today's emergency demands the finest available manpower.

When you need men who are qualified to look ahead with you to future progress, write or wire Oliver L. Parks, President.

**PARKS AIR COLLEGE, Inc.**  
East St. Louis, Illinois

Contractors to the United States Army, Navy and Coast Guard, and Aircraft Engine Builders . . .

*Franklin*

# FINE AIRCRAFT ENGINES

★

AIRCOOLED MOTORS CORPORATION ★ SYRACUSE, N. Y. ★

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## C-W's Net Tops 25 Million; Shipments Increase 169%

**I**N ITS annual report for 1941, Curtiss-Wright Corp., New York, N. Y., announces total shipments for the year, amounting to \$373,083,364, were greater than the volume output of any other firm in the industry. An increase of 169% is recorded over 1940 shipments of \$138,720,141. Net profit for the year was \$25,717,512, compared with \$15,747,000 for 1940. Total taxes paid jumped from \$30,876,143 in 1940 to \$9,822,578 last year.

Speaking of plywood cargo-transport development in a supplementary statement issued with the annual report, G. W. Vaughan, president, states that C-W's new Army cargo plane built largely of non-strategic materials is designed to permit a large percentage of subcontracting. Furniture companies and other woodworking establishments will be assisted in formulating mass-producing methods for many parts of the new plane.

Mentioning general subcontracting activities of the various manufacturing divisions, Vaughan reports that company policy of maintaining two or more alternate sources of supply for parts and materials "has been a great help to the company in expanding its subcontracting program."

The general progress statement of the company discloses that key personnel are now being given periodic physical check-ups as a result of rapid expansion which, the company states, has overtaxed personnel. Condition of men thus checked has been found with few exceptions to be excellent.

Average annual earnings of Curtiss-Wright employees, excluding officers and salaried personnel, increased from \$1,930.23 in 1940 to \$2,512.64 in 1941, with weekly earnings jumping from \$37.12 to \$48.32. Women are now being trained in company schools to replace men wherever it is possible and becomes necessary. Consolidated balance sheet for the Corporation and subsidiaries includes:

### Assets

Cash	\$ 78,081,704
U. S. Treasury note (tax series)	20,000,000
Accounts receivable	54,828,675

Advances to suppliers	5,683,456
Inventories of materials and supplies	114,879,968
Preparation costs	14,129,487
Prepaid taxes and insurance	3,467,548
Patents and license right	831,038
Manufacturing facilities	23,977,553
Airport facilities (held for disposal)	9,435,301
Mortgages and other receivables	899,914
Misc. investments, at cost	271,457
	\$326,516,107

### Liabilities

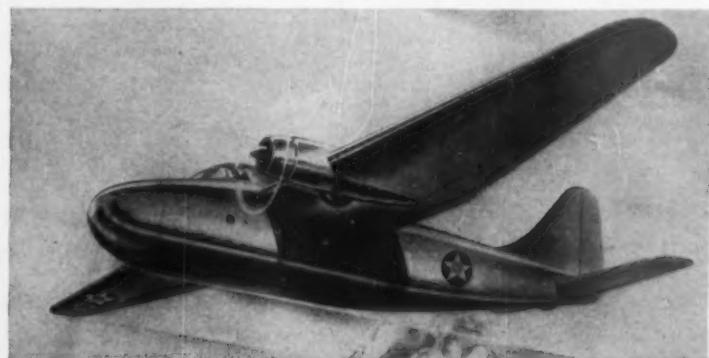
Accounts payable	\$ 26,398,535
Accrued wages, taxes, etc.	10,482,257
Deposits on uncompleted contracts	94,444,948
Provision for taxes	95,976,933
Provision for incentive compensation	2,536,273
Other liabilities	704,347
Deferred income	7,996,488
Deposits for mfg. facilities less portion earned	14,840,519
Reserve for service guaranty and uninsured losses	4,527,463
Reserve for future engineering development and post-war readjustments	7,230,000
Minority interest in capital stock and surplus of subsidiary company	625,253
Class A Stock (\$1-par) (2,000,000 shares authorized; 1,158,000 outstanding)	1,158,699
Common Stock (\$1-par) (10,000,000 shares authorized; 7,432,026 outstanding)	7,432,026
Capital surplus	19,843,060
Earned surplus since Dec. 31, 1931	32,319,300
	\$326,516,107

Curtiss-Wright paid dividends during 1941 of \$2 a share on Class A, and \$1 a share on common, totaling \$9,747,598; 1940 dividends were \$6,032,406, or \$2 on class A and 50¢ on common stock.

## Bellanca Aircraft

Bellanca Aircraft Corp. reports a net loss for year ended Dec. 31 of \$151,953. Sales were \$982,543 and gross profit \$84,517. Deficit from Jan. 1, 1933, to Dec. 31, 1940, was \$580,195. making deficit as of Dec. 31, 1941, \$732,149.

Balance sheet as of Dec. 31: Assets \$1,312,806; current assets \$653,574; current liabilities \$831,841; capital stock \$229,650; net surplus \$251,315.



**Cargo Giant of Wood:** The new, giant Curtiss military cargo transport plane which Curtiss-Wright Corp. announced it will build of wood and other non-strategic materials in a new plant in Kentucky is shown in the above sketch. Designated the Curtiss C-76, the new twin-engine plane is said to be about the size of modern transport planes. 'Large numbers' of the plane will be built.

## Incorporations

**California**—Skylark Manufacturing Co., Inc. 350 Washington Blvd., Venice; limited partnership, authorized capital of 100,000 shares of \$1 p.v. preferred and 150,000 shares of \$1 p.v. common; granted permit to issue 100,000 of common. Officers and directors: F. G. Perkins, president; E. A. Perkins, vice president; V. R. G. Wilbur, secretary and treasurer; Franklin Baldwin, and K. P. Larsen.

**Delaware**—Van Dusen Aircraft Inc.; principal office, Corporate Trust Co., Wilmington; aircraft Incorporators: R. F. Lewis, L. H. Herman, W. T. Cunningham, Wilmington.

**Massachusetts**—Eastern Aircraft Corp., 41 Commerce St., Norwalk; shares subscribed for 1,000 common on which no cash and \$5,000 in property have been paid. President, L. J. S. Brody, New Canaan, 260 shares; 1st vice president, Willard A. O'Brien, Norwalk, 250 shares; 2nd vice president, Richard Cummins, 260 shares; secretary-treasurer, Cornelius W. Vaness, New Canaan, 260 shares. Directors include the officers and Stowell W. Meards, New Canaan. Stockholders: L. J. S. Brody and Cornelius W. Vaness, jointly, 34 shares.

**New York**—H. Sundstedt Aircraft Manufacturing Co. Inc., Queens; aircraft of all kinds; 100,000; L. Robert Hitzig, 37-55 73rd St., Jackson Heights, N. Y.

**New York**—M. C. P. Equipment Corp., Queens; aircraft of all kinds \$50,000; Joseph F. Soviero, 90-3565 Utica Blvd., Jamaica, N. Y.

**New York**—Victory Aircraft Supply Co. Inc., Bronx; aircraft accessories of all kinds; \$6,000; Continental Lawyers Albany Service 305 Broadway, New York, N. Y.

**Tennessee**—Aircraft Products Inc.; offices at 1116 Commerce Title Bldg., Memphis; welding and construction of airplane parts; 200 shares at \$50 p.v. Edward M. Knoff, president; other incorporators: Jack W. S. Boone and J. Ed Johnson.

## PCA

**Pennsylvania**—Central Airlines reported net loss of \$101,470 for 1941, compared with a net income of \$105,563, or 3% each on 331,790 common shares, in 1940.

Revenue passenger traffic for the fourth quarter of 1942 was 73.01% over the comparable 1941 period, or 77,964 revenue passengers against 45,064. In the same period 15,578,516 revenue passenger miles were operated, 90.71% over 8,158,149 year ago.

## American Central

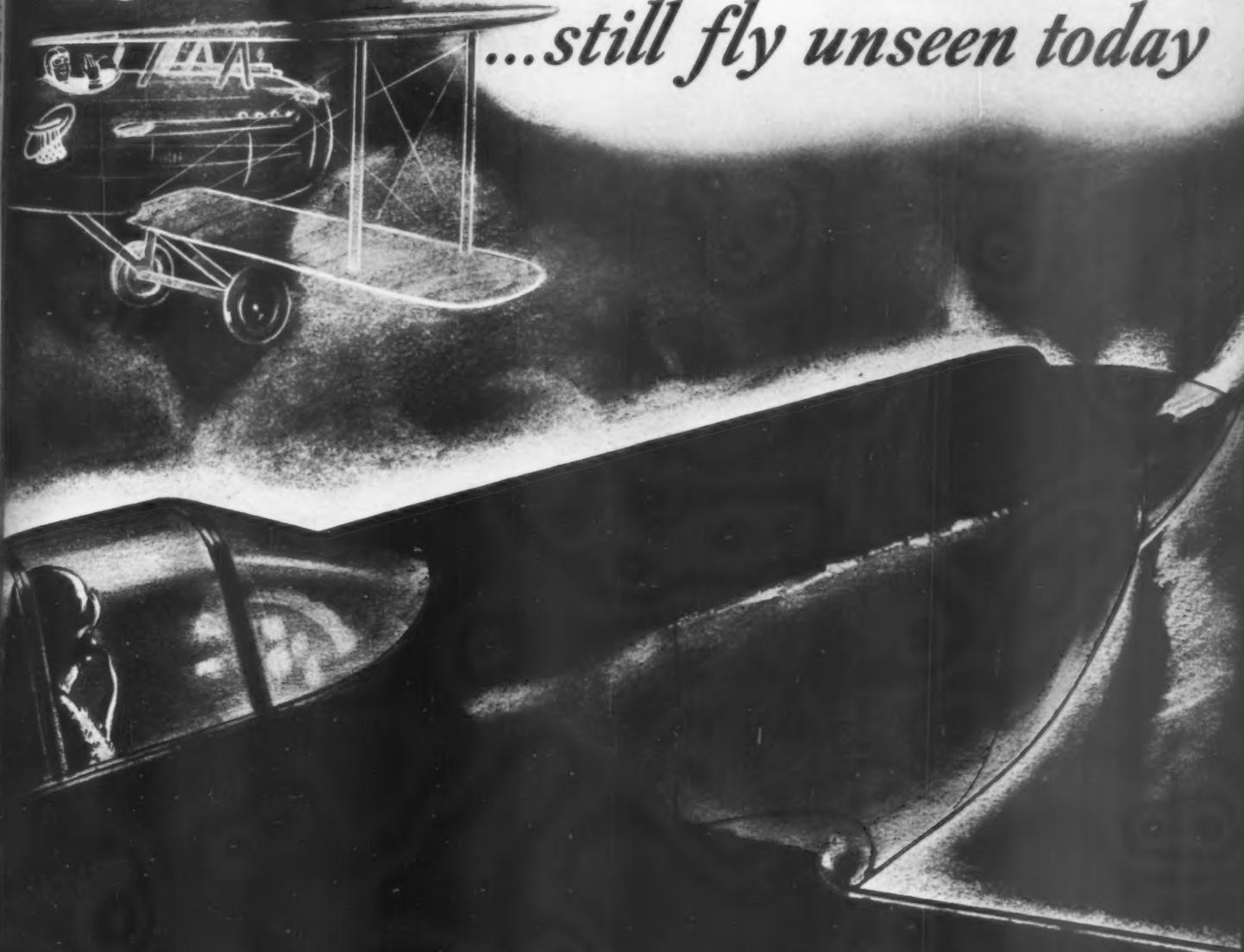
American Central Manufacturing Corp. is the name which has been adopted for the affiliate of Aviation Corp., formerly known as Auburn Central Manufacturing Corp., successor to the Auburn motor car manufacturer. Net earnings in quarter ended Feb. 28 were \$217,029 after all charges, against loss of \$16,059 in the same 1941 quarter.

"Company's plant at Connersville, Ind., is working three shifts a day on war orders, including aircraft wings for dive bombers, other aviation parts, and reconnaissance car bodies for Army jeep, and kitchen cabinets and sinks for defense housing projects."

1918

# THE ACES OF WORLD WAR I

*...still fly unseen today*



TODAY'S pilots, like today's 'planes, owe much to the pilots of World War I. For the lessons learned a generation ago, still are basic today. And those flyers of World War I are giving just as generously today. They're giving their time, their experience, their help... help which profoundly influences every phase of flying. Training, combat tactics, strategy, aircraft design—such are the contributions of experience to youth.

Recently, a notable example was the tour of Col. Eddie Rickenbacker and Col. Frank Hunter. They covered combat units of the Air Forces in the United States to help train young pilots in the psychology of aerial combat. Thus, they're passing on to student pilots the priceless heritage of experience which made them outstanding aces of World War I.

At McDonnell, in the production of *precision-built* aircraft and parts for our armed forces, we recognize an obligation—to see that what we build is worthy not only of the flyers of World War II, but worthy also of the heroic traditions of the Air Corps... traditions *made* by the flyers of World War I.

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LAMBERT FIELD ★ SAINT LOUIS

# 5 service points speed ADEL'S war deliveries



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QUALIFIED ENGINEERS CONNECTED WITH WAR PRODUCTION MAY OBTAIN PRECISE LOCATIONS ABOVE INDICATED BY CONTACTING OUR BURBANK HEADQUARTERS

